

WAR DEPARTMENT TECHNICAL MANUAL

TM 8-625

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CASSETTE CHANGER,

STEREOSCOPIC, UPRIGHT,

MAGNETICALLY CONTROLLED

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WAR DEPARTMENT • 6 OCTOBER 1944

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TM 8-625, Cassette Changer, Stereoscopic, Upright, Magnetically Controlled, is published for the information and guidance of all concerned.

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BY ORDER OF THE SECRETARY OF WAR:

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For explanation of symbols, see FM 21-6.

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Approved  
Supt. of Doc.  
1-6-45

## CHAPTER 1

### INTRODUCTION

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#### Section I. GENERAL

1. **SCOPE.** **a.** This manual is published for the information and guidance of all personnel charged with the operation and maintenance of Cassette Changer, Medical Department Item No. 60117, in the field. It contains instructions for assembling, operating, first and second echelon maintenance, and packing. The text is supplemented by illustrations and wiring diagrams.  
**b.** A Standard Nomenclature List for each manufacturer is included in the appendix.

#### Section II. DESCRIPTION AND DATA

2. **DESCRIPTION. General information.** The cassette changer is an instrument used in taking radiographs of the chest. It provides a means of holding and moving into position two films. The unit provides for the accommodation of accessory devices necessary for making stereoscopic Potter-Bucky radiographs of the chest.

3. **DATA.** **a. Performance.** Most machines operate on 110- to 120-volt, 60-cycle, a-c. It is possible to secure machines at 25 and 50 cycles when such frequency is required.

**b. Manufacturers.** (1) The Standard Motor-Driven Horizontal Cassette Changer, Model HCC, is manufactured by the Standard X-Ray Company of Chicago, Illinois.

(2) The G. E. Motor-Driven Cassette Changer is manufactured by the General Electric X-Ray Corporation of Chicago, Illinois.

(3) The Westinghouse Horizontal Cassette Changer is manufactured by the Westinghouse Electric and Manufacturing Company of East Pittsburgh, Pennsylvania.

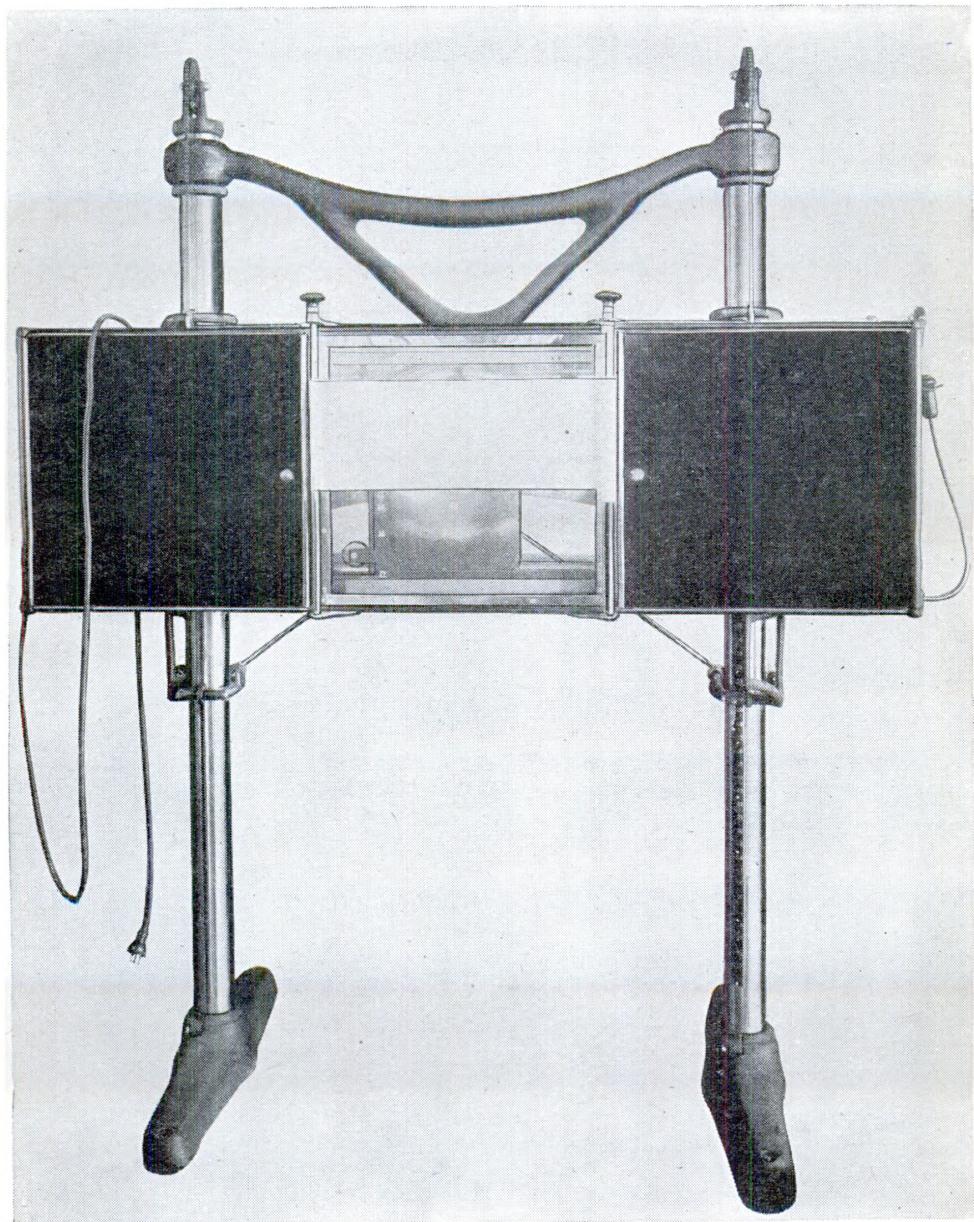
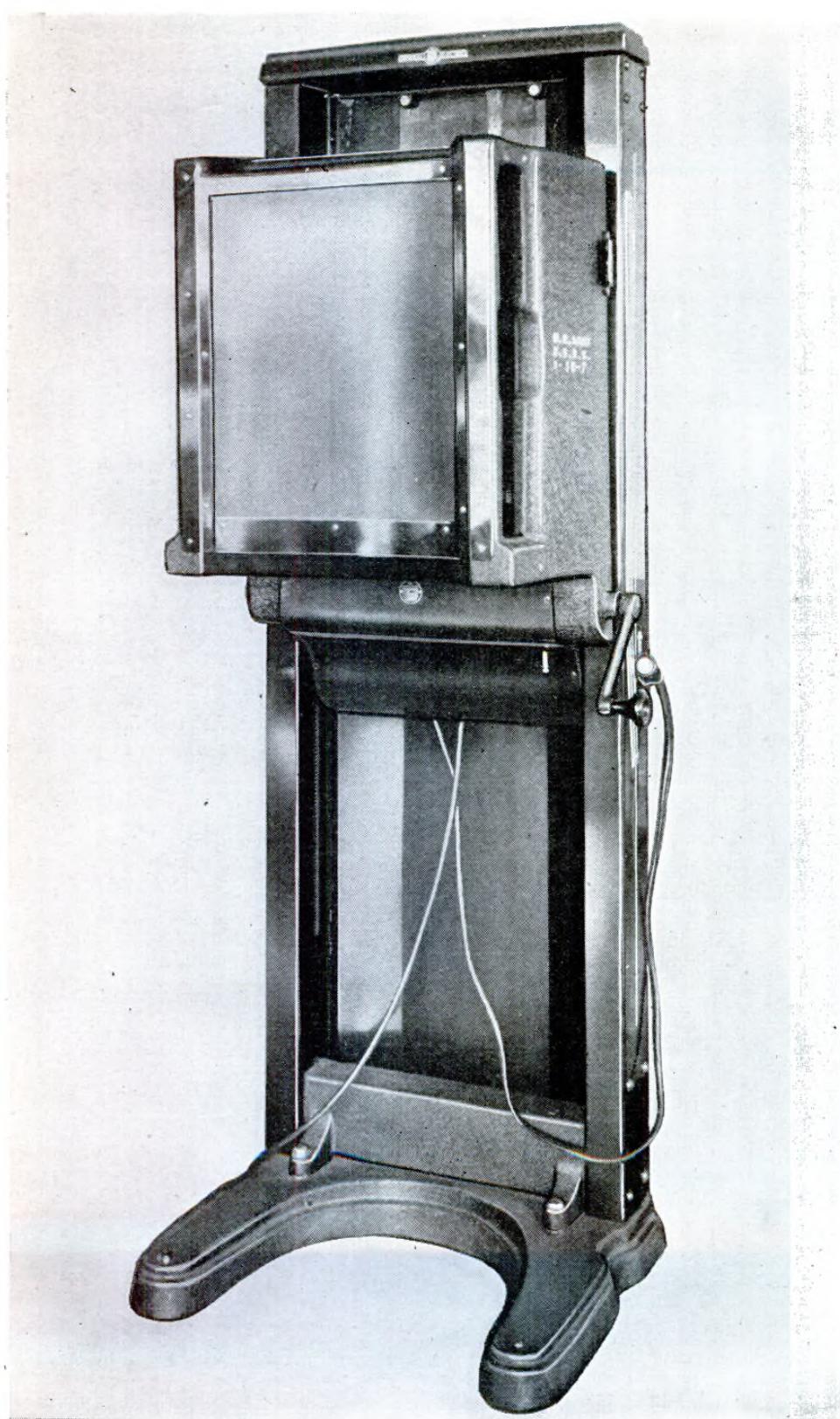


Figure 1. Cassette Changer, Standard X-Ray Company.



*Figure 2. Cassette Changer, General Electric X-Ray Corporation.*

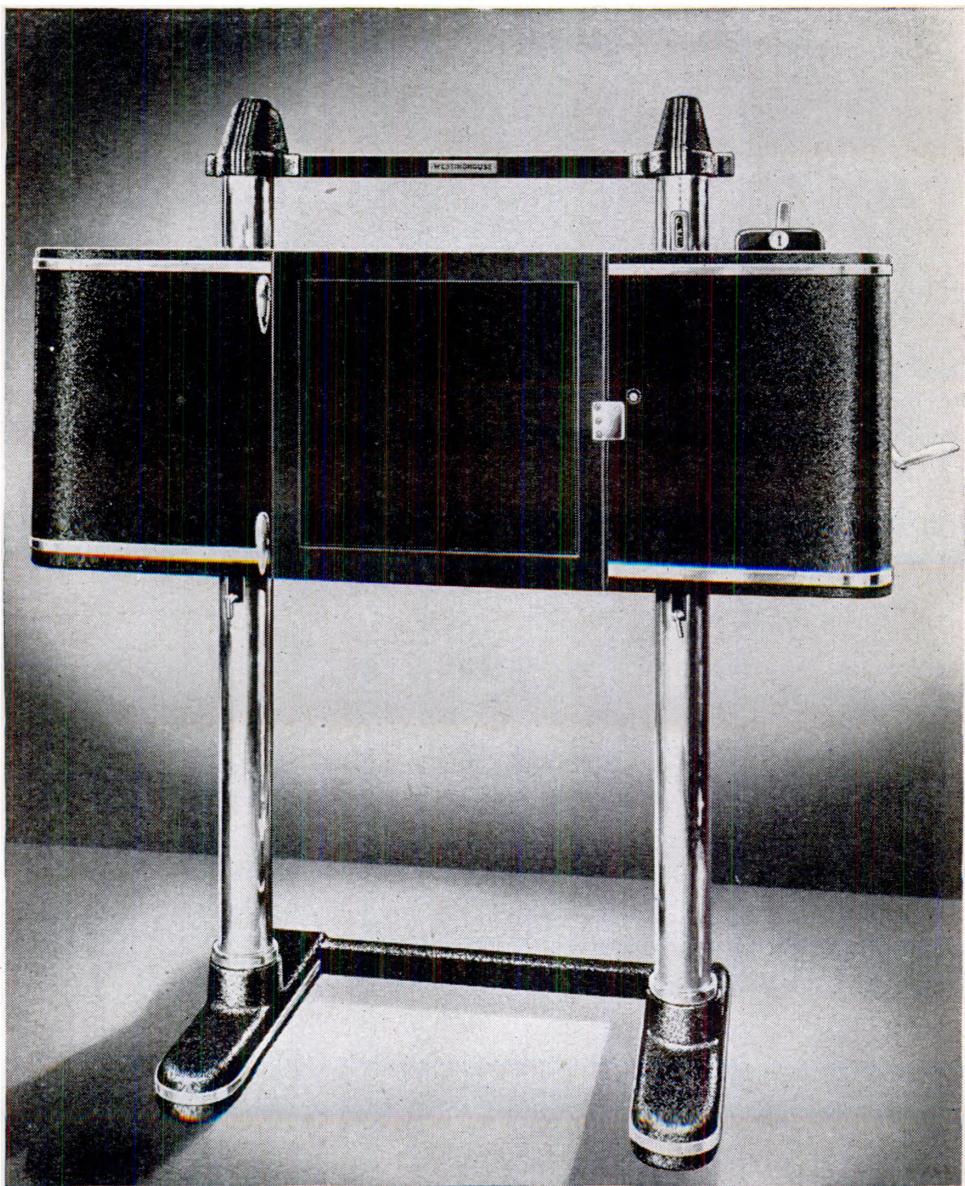


Figure 3. Cassette Changer, Westinghouse Electric and Manufacturing Company.

## CHAPTER 2

# OPERATING INSTRUCTIONS

## STANDARD X-RAY COMPANY MODEL

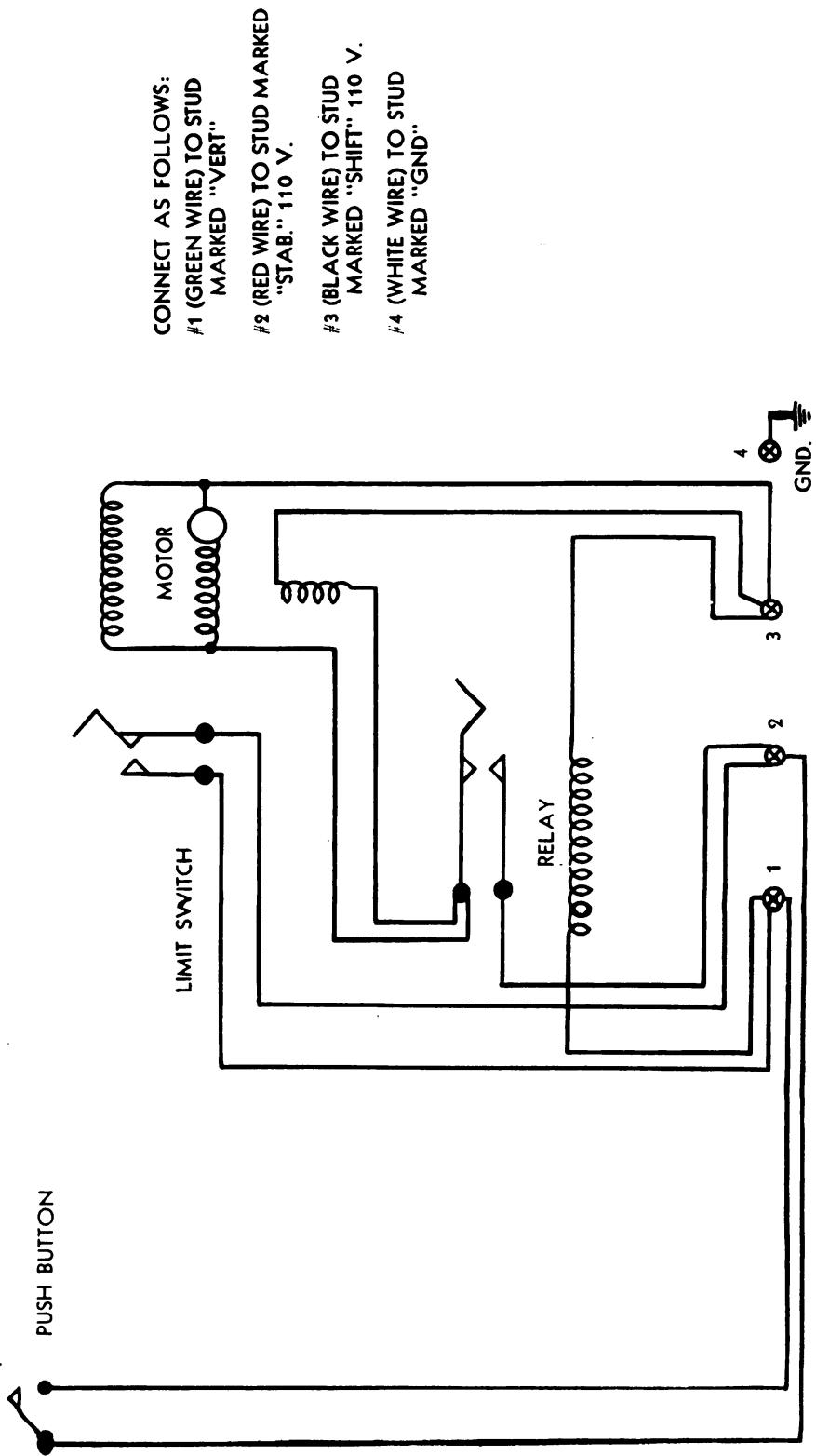
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### Section I. GENERAL

**4. SCOPE.** This chapter contains information for the guidance of the personnel responsible for the operation of the Standard Motor-Driven, Horizontal, Model HCC, Cassette Changer. It also contains information on the operation of the equipment, with description and location of the controls.

### Section II. SERVICE UPON RECEIPT OF EQUIPMENT

**5. UNPACKING AND ASSEMBLING.** **a. General.** This equipment is shipped in three cases. The first contains the entire frame; the second, the mechanism; and the third, the "feet". Unpack the crates. Mount the columns on the "feet". Tighten them firmly and adjust the leveling screws in the "feet" until the columns are perfectly vertical. Set the mechanism on a box between the two legs and attach the mechanism to the four roller brackets. The top roller brackets are each attached by means of two cap screws. The bottom roller brackets are each attached by means of two cap screws and one machine screw. You will have to open the door of the case to see the hole through which the machine screw passes, in order to attach the case to the front side of the bottom brackets. Lift the mechanism to the top of its travel. Remove the two nuts from the studs on the ends of the counterweight chains, being careful that the chains do not get away and fall back into the tube columns. Thread these chains through the top bar of the mechanism, then replace one nut on each stud. Adjust these nuts until the mechanism frame is perfectly horizontal when checked with a spirit level. Replace the other nuts on the studs and tighten them firmly against the first nuts without changing the above adjustment. Insert the long locking rod and handle from the right-hand end; it passes through one guide hole and two clamp castings, one on each leg. If either of these castings does not hold firmly when the locking handle is tightened, tension against the locking



*Figure 4. Wiring diagram for connecting Standard Cassette Changer to Standard X-Ray Machines.*

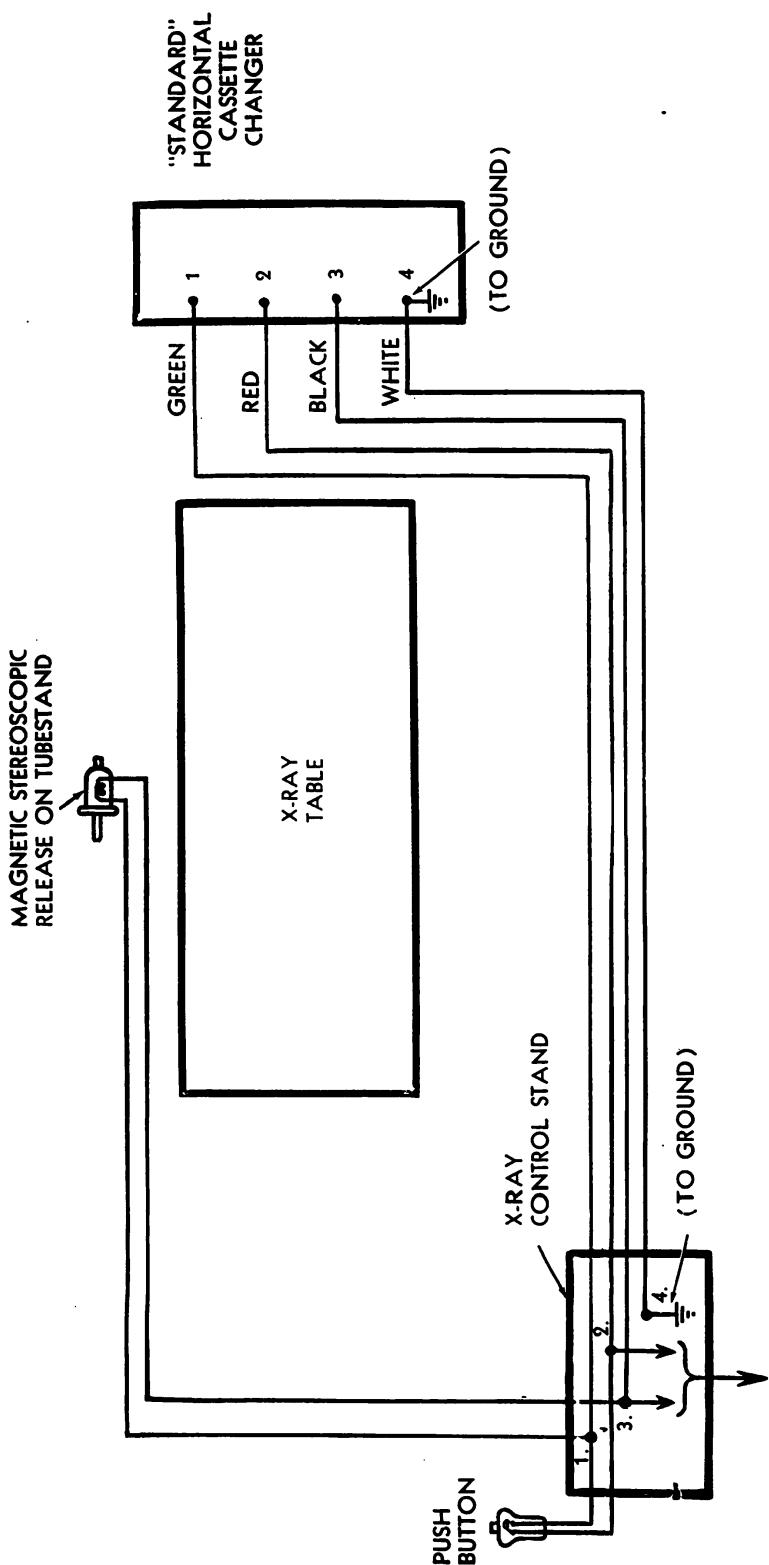


Figure 5. Wiring diagram for connecting Standard Cassette Changer to any machine.

handle must be increased. To accomplish this, first locate the two studs which pass through the slots in the ends of clamp castings. Each stud is provided with two lock nuts which, when tightened, will increase the tension. The counterweights are held in place in the columns by means of screws which will be found near the bottom of each column. Do not remove these screws until after the counterweights have been attached.

**b. Wiring.** Wiring diagrams are shown on pages 6 and 7, which supply required data for electrical connections.

**6. DISASSEMBLING AND PACKING.** For disassembling, reverse the procedure described in paragraph 5. It is recommended that the equipment be packed in three cases as originally received. Make certain that all parts are effectively braced to prevent movement within the case. Packing materials, such as paper or excelsior, should be employed. Cast parts should be especially well braced to prevent breakage. Chrome-plated or exposed parts should be coated with a light film of oil before packing.

### Section III. CONTROLS AND OPERATION

**7. CONTROLS.** **a. Push button.** The push button is a hand-operated device located at the end of the rubber-covered cable. Pressing the push button causes the relay coil to be energized. When pressure on the push button is released, the relay coil operates a set of controls which starts the motor, releases the electric brake in the cassette changer, and energizes the stereo-shift.

**b. Limit switch.** The limit switch is operated by the motor and causes the relay to operate, shutting off the current from the motor and the electric brake.

**c. Motor.** The motor is attached through reducing gears and a pair of arms to the cassette changer. The cassette carriage moves slowly at first. Its speed increases steadily until it has reached the middle of its travel. From that point onward, its speed decreases. The speed of travel is not adjustable. It has been set at the factory to make the shift in 2 seconds.

## CHAPTER 3

# OPERATING INSTRUCTIONS GENERAL ELECTRIC X-RAY CORPORATION MODEL

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### Section I. GENERAL.

**8. SCOPE.** This chapter contains information for the guidance of the personnel responsible for the operation of the General Electric Motor-Driven Cassette Changer. It includes information on the operation of the equipment, with description and location of the controls.

### Section II. SERVICE UPON RECEIPT OF EQUIPMENT

**9. UNPACKING.** This equipment is shipped from the factory dismantled into the following major assemblies:

- a. The base casting.
- b. The upright structure.
- c. The housing for the changing and raising mechanism.

Unpack the base casting, 6R05252 (fig. 6). Next unpack the housing, 6R05262-64-66-68 (fig. 6), which contains the changing and raising mechanism. The large box containing the vertical or upright structure should be placed on the floor so that the vertical structure will rest on its back. The top, sides, and ends of the shipping box shall then be knocked out. The bottom of the box is so constructed that the vertical structure is blocked up, making it possible to fasten the base casting, 6R05252 (fig. 6), and to install the housing.

**10. ASSEMBLY. a. General.** Fasten the base to the vertical structure, using the four bolts furnished, SR00568 (fig. 6). The zinc-plated holes are placed at the rear. Remove the two screws, SR00044 (fig. 6), at the top rear of the vertical structure and take out the two threaded studs, 6R05336 (fig. 6), from the front side. Remove the four screws, SR00562 (fig. 6), on each side at the top and lift off the top casting, 6R05260 (fig. 6). Place the casting aside temporarily. Remove the height-adjustment stop, 6R05338 (fig. 6). The housing for the motor and raising

1. GR05290	Housing, motor and brake
2. GR05340	Ears, for wall mounting
3. GR05336	Stud, threaded
4. GR05338	Stop, height adjustment
5. GR05280	Screw, brake
6. SR00568	Bolt, $\frac{3}{8}$ -16 x $1\frac{1}{4}$ inch, Hex H.M.
7. GR05278	Pad, base leveling
8. GR05262-64-66-68	Housing, cast iron, left and right side, top and bottom
9. GR05312	Channel, cassette
10. GR05286	Dispenser, paper, complete: Assembly
11. GR05260	Top, cast iron
12. SR00562	Screw, $\frac{3}{8}$ -16 x $\frac{5}{8}$ inch, R.H.M.
13. SR00044	Screw, 10-32 x $\frac{7}{16}$ inch, R.H.M.
14. GR05276	Plate, indicating
15. GR05282	Immobilizer, patient, complete: with roller and crank
16. GR05254-56	Column, upright, steel fabricated, left and right
17. GR05270	Crank, height adjusting
18. GR05274	Scale, height indicator
19. GR05278	Pad, base-leveling

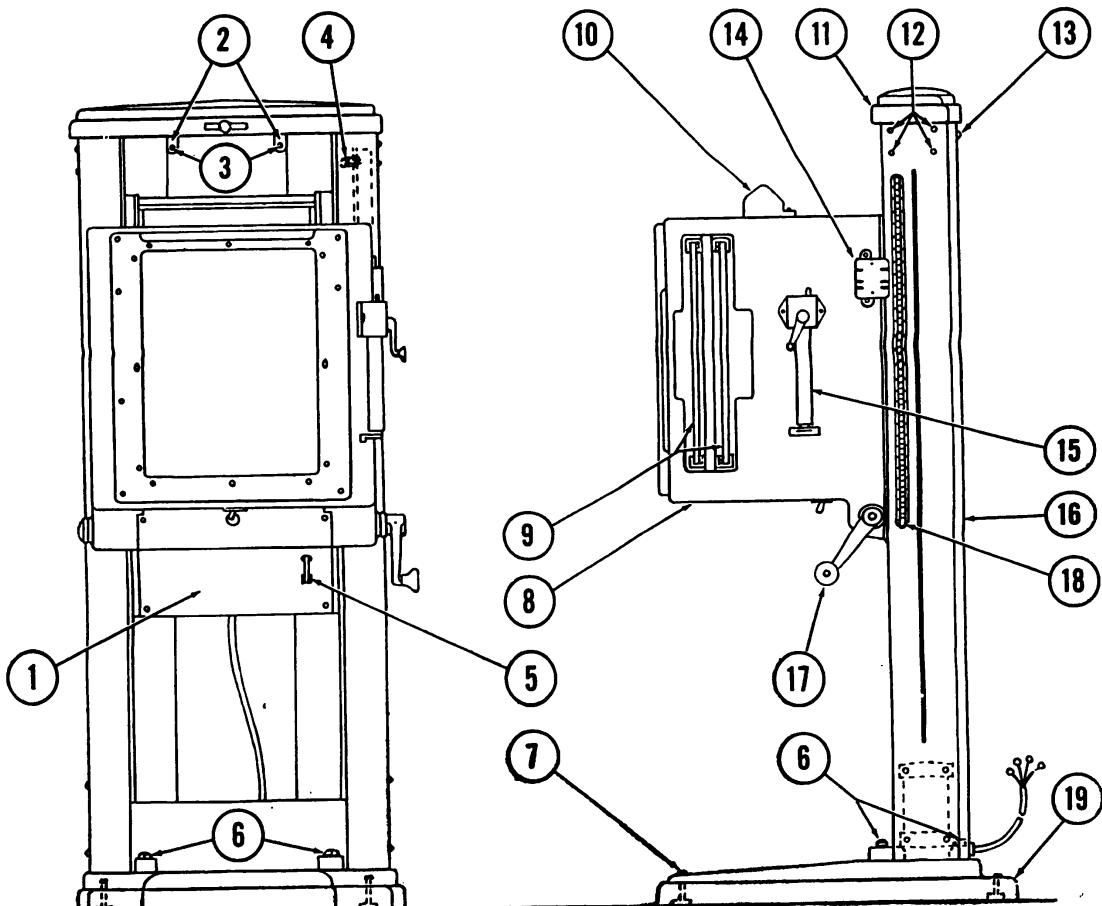


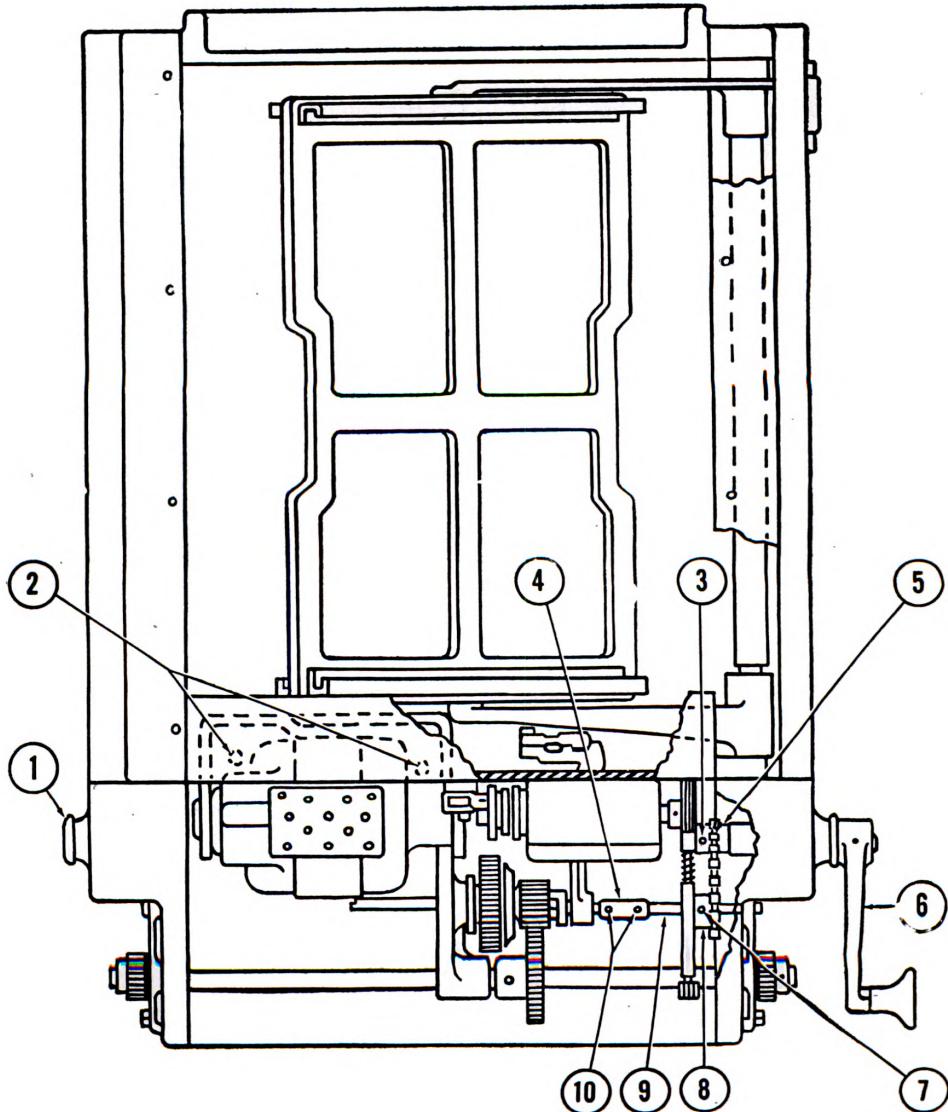
Figure 6. External parts of General Electric Cassette Changer.

mechanism can now be installed. To avoid any possibility of marring the surfaces of the upright structure when installing the housing, it is recommended that a cloth be placed over each column from the top to a point about midway down. This will prevent the housing from coming in contact with the front side of the columns when positioning the housing. As soon as the rollers and gears are engaged, these cloths can be removed. Using two men, one at each side, place the housing into the upright structure by inserting it from the top end. Carefully guide it into place so that the rollers engage their respective tracks properly. Turn the crank, 6R05270 (fig. 6), so that the teeth on the pinion gears will mesh with the teeth on the gear racks. Run the housing into the structure far enough to permit reinstallation of the height-adjustment stop, 6R05338 (fig. 6). Place the top casting in position, then fasten it securely to the uprights by means of the screws, SR00562 (fig. 6), on each side. Insert the two threaded studs, 6R05336 (fig. 6), in the ears of the top casting, and insert the screws, SR00044 (fig. 6), through the rear panel, tightening them down firmly. The entire assembly can now be stood upright and moved into the position in which it is to be used.

**b. Wall mounting.** The base casting for wall mounted installation is fastened to the vertical structure in exactly the same manner as described for floor type installations. Provision is made for anchoring the unit to the wall by means of the ears, 6R05340 (fig. 6), on the top casting. First, remove the two screws, SR00044 (fig. 6), and the two studs, 6R05336 (fig. 6). Bolts or screws can be used for anchoring to the wall, depending upon the wall construction.

**c. Converting to left-hand operation.** The cassette changer is supplied arranged for right-hand operation of the raising and lowering mechanism. The cassettes can be inserted from either side. If it is desirable to have the raising mechanism arranged for left-hand operation, proceed as follows: remove the bottom cover, 6R05290 (fig. 6), by taking out the eight binding head screws and washers which fasten it in place. This permits access to the raising mechanism. Referring to figure 7, loosen the setscrew and drive out the pin, 6R05292, in the gear, 6R05324, on the end of the crankshaft, 6R05300. Pull out the shaft and crank. Loosen the two setscrews, 6R05296, in the sleeve, 6R05294. Drive out the pin, 6R05342, in the gear, 6R05326, and remove the shaft, 6R05344. Duplicate holes for the assembly just removed are provided on the left side of the housing. Pry off the cap, 6R05346, on the left of the housing and reinstall on the right. Reassemble the mechanism on the left side in exactly the same manner as it was found in the right. Be sure all pins have been installed and all setscrews firmly tightened. Remove the scale, 6R05274 (fig. 6), and the indicator, 6R05276 (fig. 6), from the right-hand column and install them in the same manner on the left column in the holes provided.

1. 6R05346 Cap: For left side installation
2. 6R05288 Bearing, motor
3. 6R05292 Pin, locking, 1 inch
4. 6R05294 Sleeve, crankshaft
5. 6R05324 Sprocket, crank
6. 6R05270 Crank, height adjusting
7. 6R05342 Pin: For holding gear in place
8. 6R05326 Sprocket, drive shaft
9. 6R05344 Driveshaft
10. 6R05296 Setscrew, sleeve



*Figure 7. Internal parts of General Electric Cassette Changer.*

**d. Leveling.** The cassette changer can be leveled by means of the floor pads, 6R05278 (fig. 6), at the front and rear of the base casting. Check with a spirit level. Make certain that the cassette changer is exactly in line with the center of the X-ray table.

**e. Cassette channels.** The cassette changer is shipped from the factory arranged for use with Rayspeed Universal cassettes. However, provision is made whereby it can be adapted to different types of cassettes as follows: remove the frame on the front of the housing by taking out the eight fillister head machine screws which fasten it in place. The bottom cassette channels are held in place by means of four machine screws. Three sets of holes are provided in the housing for fastening the channels. Referring to the table below, fasten the proper channel in the correct set of holes for the type of cassette to be used.

<i>Cassette type</i>	<i>Holes</i>	<i>Channels</i>
(1) Stele-Weld or Univ-Rayspeed ....	Top (as shipped from factory) .....	As shipped from factory
(2) Competitive make ...	Top (as shipped from factory) .....	As shipped from factory
(3) Rayspeed (bakelite)...	Middle .....	Use the extra set furnished
(4) G.E. A1 .....	Bottom .....	Special channels must be ordered from the factory

When the channels have been correctly installed, replace the front frame of the housing and fasten in place.

**f. Height indicator scale.** The height scale, 6R05274 (fig. 6), on the cassette changer shall be set up to correspond with the height scale on the tube stand. With the X-ray tube stand carriage turned to face the cassette changer, and with the arrow marked "Table Top" of its index scale opposite "25" on the tube column scale, measure the distance from the floor to the focal spot of the X-ray tube. Then raise or lower the cassette changer so that the distance from the center of the cassette changer panel to the floor will be the same as the distance just measured at the tube stand. Keep the cassette changer in this position and move the height scale so that "25" will be directly opposite the indicator. The height scale on the cassette changer is mounted in a small channel. To raise or lower the scale, simply force it up or down by pushing the scale from the top or bottom. If the scale binds, it can be pried off by inserting a screw driver beneath the bottom edge and working upward.

**g. Brake adjustment.** If the cassette is not parallel with the front panel of the changer, adjustment should be made on the brake screw, 6R05280 (fig. 6). If the brake is too tight, the brake screw should be turned to the left slightly. If the brake is too free, the screw should be turned to the right. The brake will have to be adjusted slightly when the size and type of cassettes are changed.

**h. Immobilization device.** If the immobilization device, 6R05282 (fig. 6), is a part of the installation, it shall be fastened in place, as shown in figure 6, using the four machine screws furnished. Mounting holes are provided in the housing. Since the cassette changer leaves the factory arranged for right-hand operation, these holes will remain open on the

right side of the housing. An ornamental casting will be found mounted in place on the left side of the housing, which can be removed and installed on the right, thereby affording the necessary mounting holes for the immobilization device on the left side, if desired.

i. **Paper dispenser.** If the paper dispenser, 6R05286 (fig. 6), is a part of the installation, it should be fastened at the top of the housing, as shown in figure 6. The necessary mounting holes are provided in the housing and the mounting screws are furnished with the dispenser.

j. **Wiring.** Because the cassette changer is usually installed at the foot or head end of the X-ray table and at a considerable distance from the control stand, it is recommended that the wiring between the control stand and the cassette changer be installed in conduit. If it is desired to install the unit without using conduit, it may be connected to the control stand by means of 4-conductor, rubber-covered cable.

**11. DISASSEMBLING AND PACKING.** For disassembling, reverse the procedure outlined in paragraphs 9 and 10a. It is recommended that the equipment be packed in the same manner as received originally. Make certain that all parts are effectively braced to prevent movement within the case. Packing materials, such as paper or excelsior, should be employed. Cast parts should be especially well braced to prevent breakage. Chrome-plated or exposed metal parts should be coated with a light film of oil before packing.

### Section III. CONTROLS

**12. CONTROLS.** a. **Hand switch.** The hand switch controls operation of the shifting mechanism. Although the motor must run the entire shifting cycle, the function of the hand switch is only to start the cycle. Once started, the mechanism will continue through the entire shifting cycle. If the tube stand is equipped with a spring-operated tube stereo-shifter, the hand switch should be pressed only momentarily. If the electric motor-operated tube stereo-shift is used, it is necessary to keep the hand switch depressed until the X-ray tube shift is completed. One of two hand switches is issued. One is a single-button hand switch and the other is a two-button hand switch, with one button marked "timer" and another "stereo". The hand switch is provided with a cord which can be attached at the control stand of the X-ray unit, or at the cassette changer.

b. **Safety switch.** The safety switch is located on the under side of the cassette carriage and serves as a further measure of protection, permitting the power to be disconnected when necessary or desired. This switch is in the OFF position when snapped to the right.

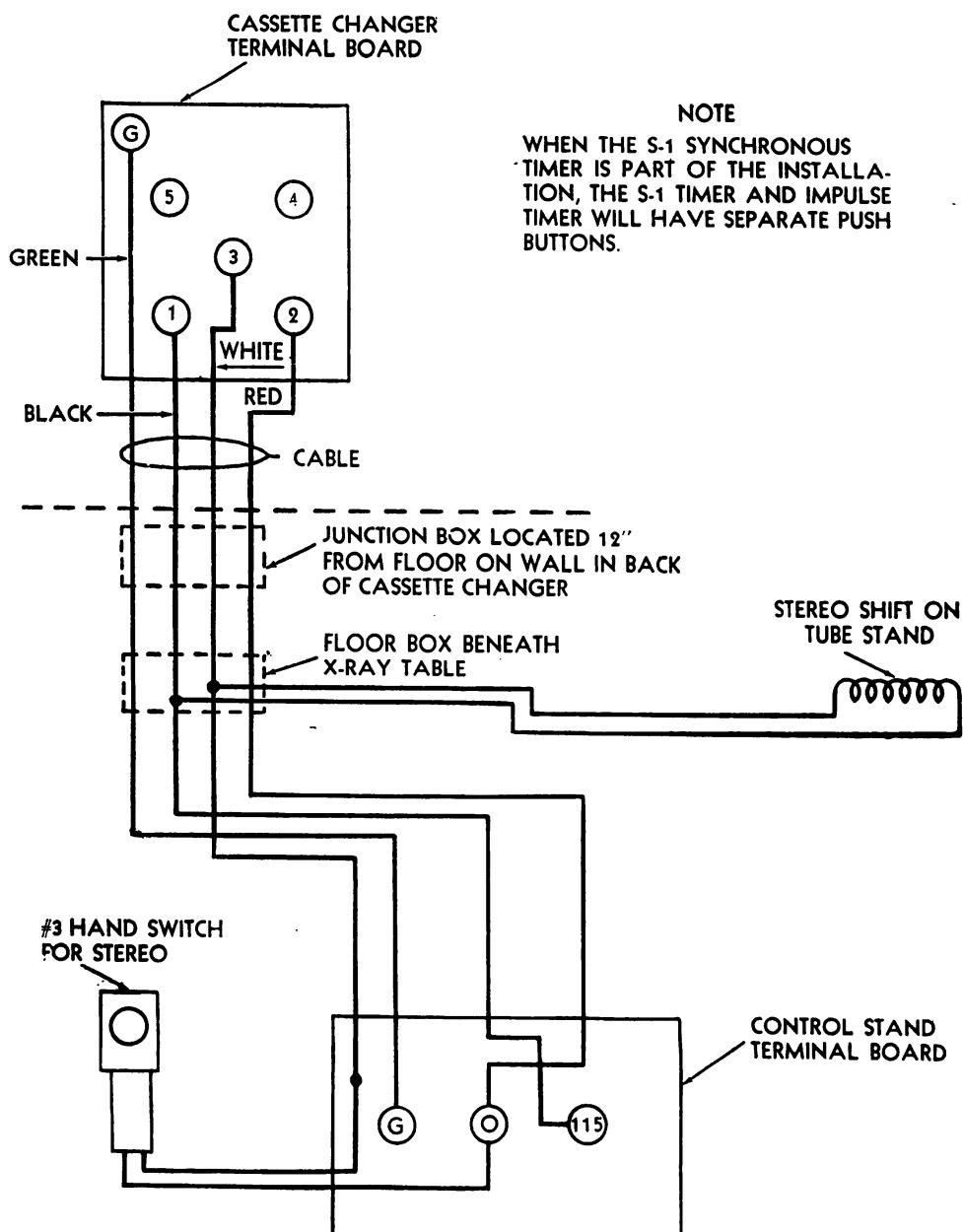
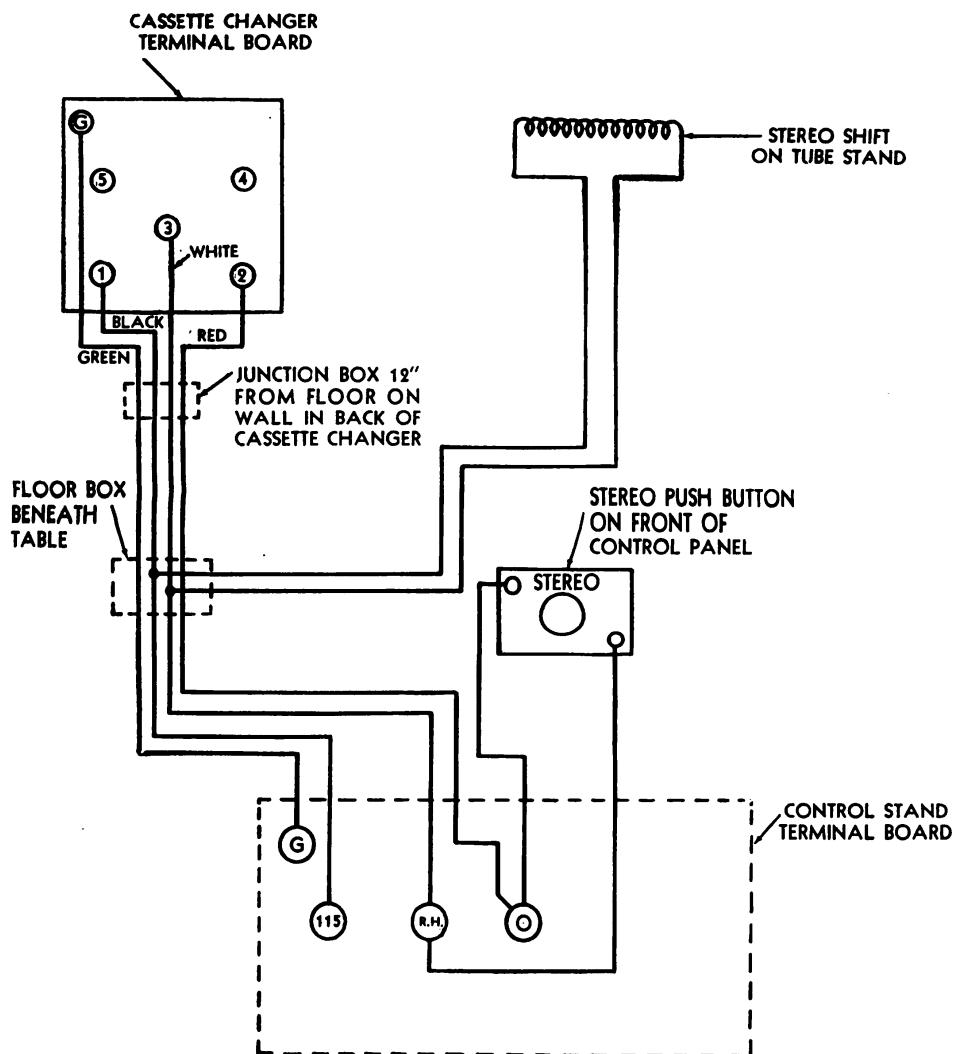


Figure 8. Wiring diagram for a standard General Electric installation.



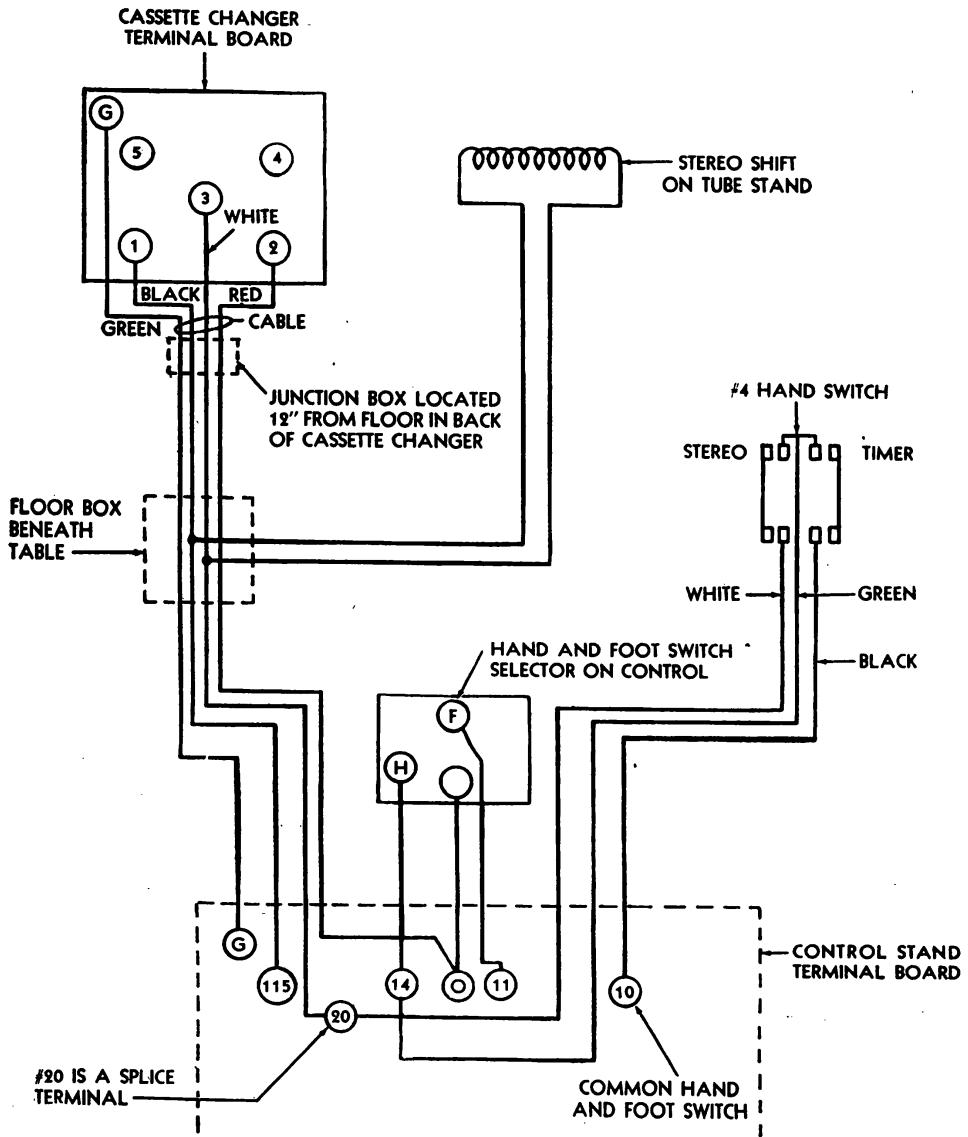
**NOTE**

IMPULSE AND S-1  
TIMERS HAVE SEPARATE  
HAND SWITCHES

**CASSETTE CHANGER**

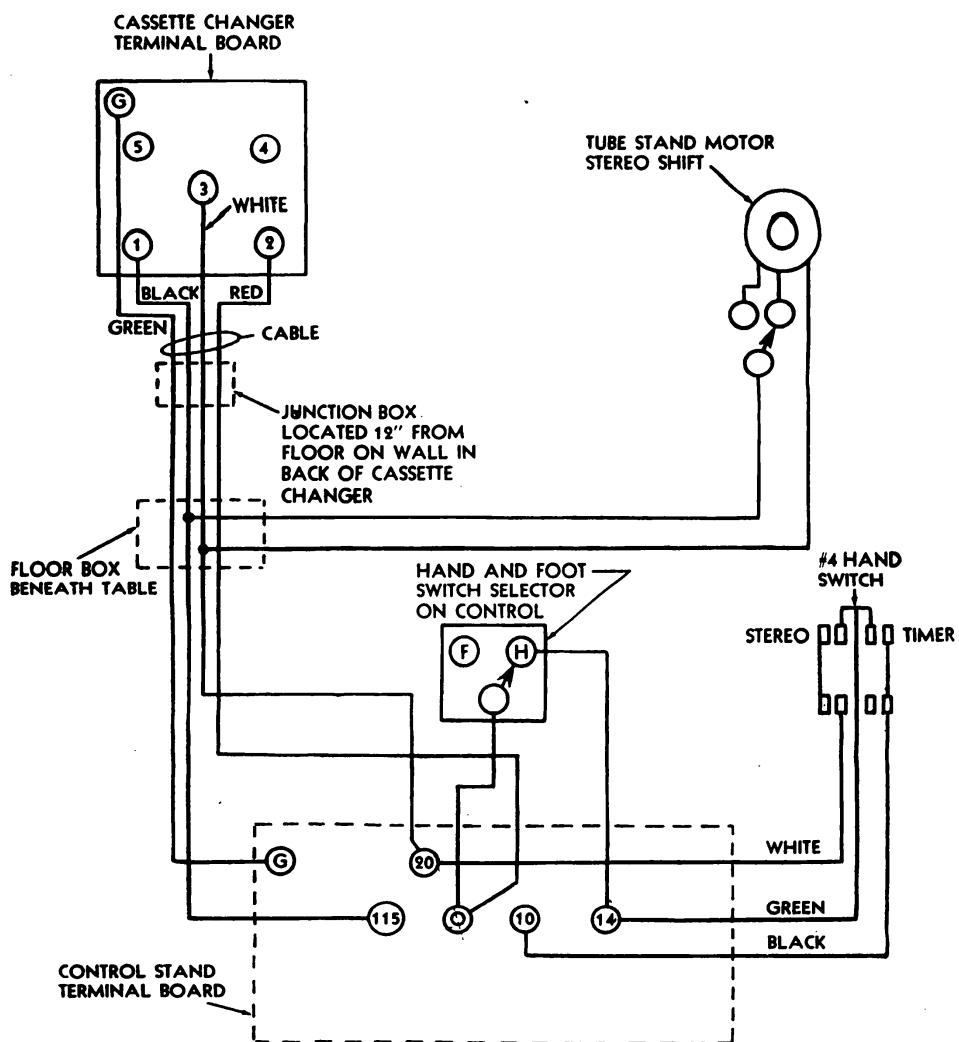
KX-8 TYPE 4 CONTROL STAND WITH S-1 SYNCHRONOUS TIMER,  
TYPE I-1 IMPULSE TIMER AND STEREO SHIFT PUSH BUTTON MOUNTED  
ON FRONT PANEL

Figure 9. Wiring diagram.



CASSETTE CHANGER  
CONTROL STAND EQUIPPED WITH TYPE S-2  
OR S-3 TIMER AND A TYPE I-2 IMPULSE TIMER

Figure 10. Wiring diagram.



CASSETTE CHANGER  
R-39 UNIT WITH TYPE S-2 OR S-3 TIMER, MOTOR OPERATED  
STEREO SHIFT AND A TWO BUTTON HAND SWITCH

Figure 11. Wiring diagram.

**c. Brake-adjustment screw.** The brake-adjustment screw is located at the right on the lower side of the cassette carriage. Its function is to control the brake so that, on shifting, the cassettes may stop in central position, that is, parallel to the front panel of the cassette carriage.

**13. OPERATION. a. Electrical connections.** After completing assembly of the unit, check figures 8 to 11 and choose the proper diagram for connecting to the control stand on the installation. Make all connections as shown on the wiring diagram. Note that when installing this cassette changer in conjunction with a motor-driven vertical stereo-shifter (fig. 11), it will not be necessary to use the relay in the control stand that was with the balanced cassette changer.

**b. Testing the unit.** Place two 14- by 17-inch cassettes in the cassette changer channels, 6R05312 (fig. 6), with the front of the cassettes out-

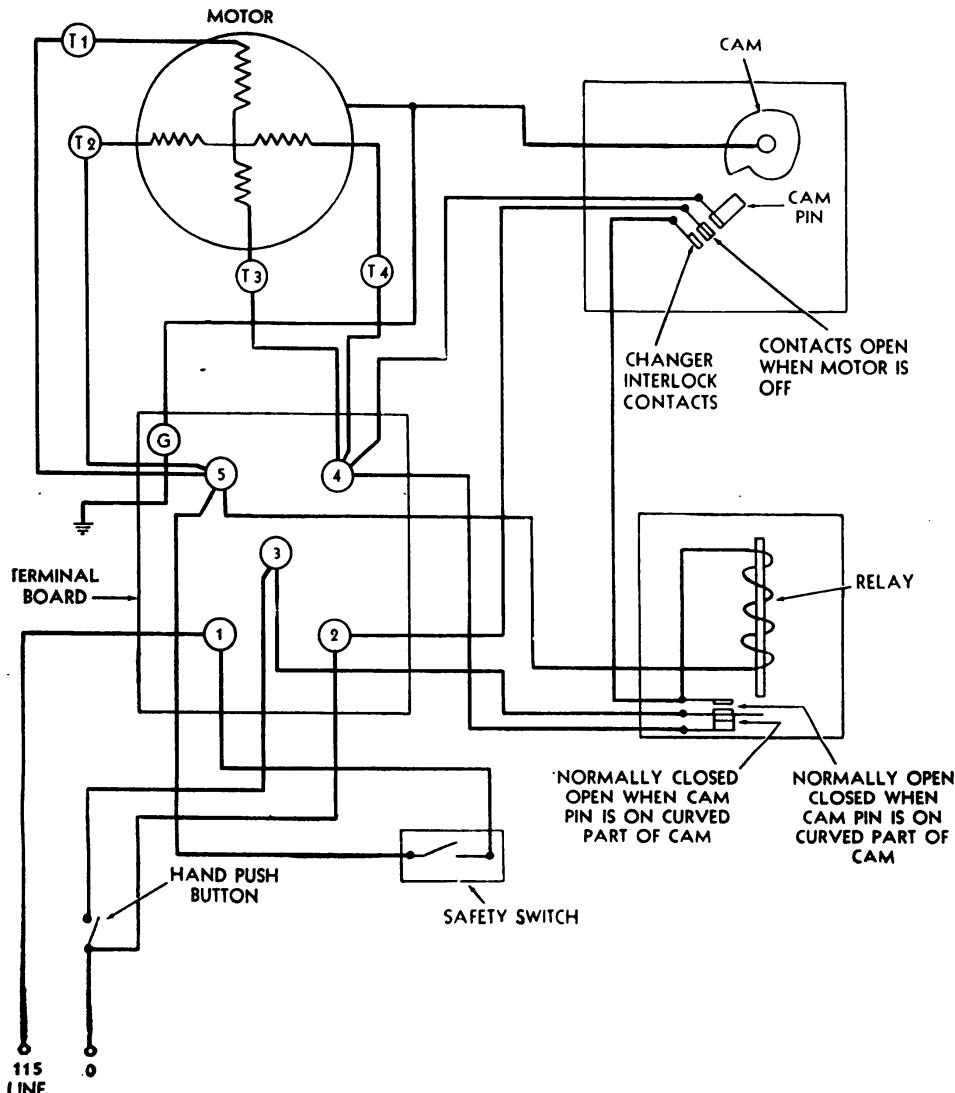


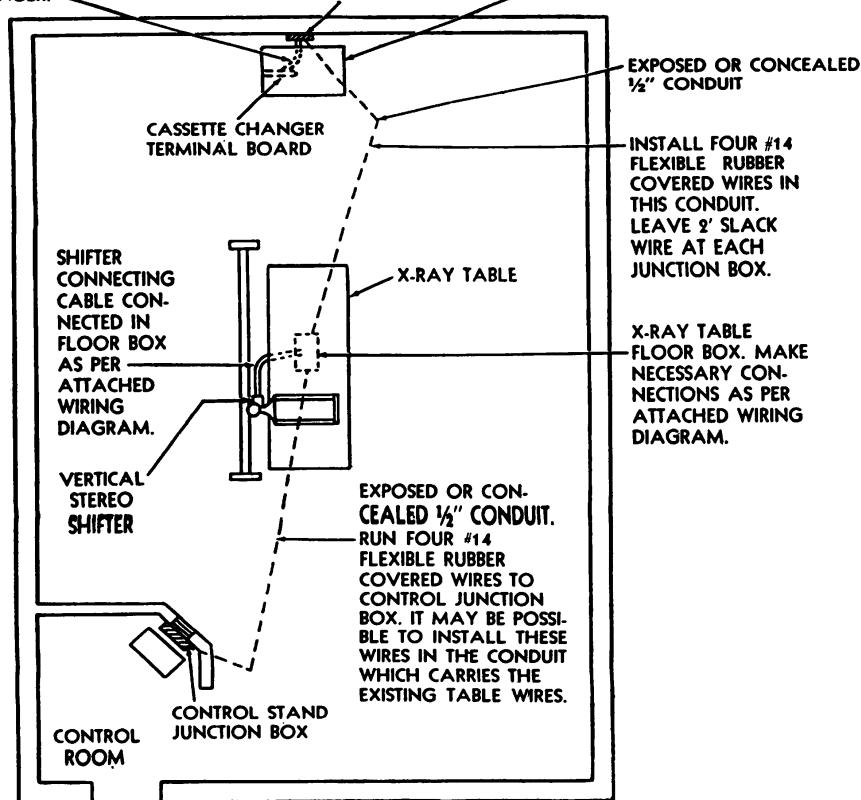
Figure 12. Wiring Diagram of the General Electric Cassette Changer.

ward. Set the tube stand stereo-shifter as indicated in its directions for operation. Place the control stand line switch in the ON position. Press the "stereo" hand-switch button; the cassettes should rotate so that the rear cassette moves to the front of the changer and the tube carriage should move the distance for which it was set. Repeat the above test ten times and observe if the cassette always ends its travel so that the front of the cassette is parallel with the front of the changer. If the cassette is not parallel, adjustments should be made on the brake screw, 6R05280 (fig. 6), as indicated in paragraph 10g. When using the magnetic release type of tube stand stereo-shifter, it is not necessary to hold the "stereo" button down during the entire excursion of the cassette mechanism. However, on the motor type stereo-shifter, it is necessary to press the button until the X-ray tube has completed its travel on the tube stand.

CUT (FURNISHED) 4 CONDUCTOR  
RUBBER COVERED CABLE TO  
LENGTH AND SPLIC WIRE AS  
SHOWN ON ATTACHED WIRING  
DIAGRAM. ALLOW SUFFICIENT  
SLACK IN CABLE TO TAKE CARE  
OF UP AND DOWN MOVEMENT  
OF CHANGER.

4" x 4" SCREW COVER  
JUNCTION BOX WITH  
AN A-3 FEDERAL BUSH-  
ING IN COVER. BOX  
MOUNTED 12" FROM  
FLOOR IN BACK OF  
CASSETTE CHANGER.

#4 MOTOR DRIVEN  
CASSETTE CHANGER



#### NOTE

ALL SOLDERED CONNECTIONS  
SHALL BE INSULATED WITH  
RUBBER AND FRICTION TAPE.

Figure 13. Typical lay-out for cassette changer.

## CHAPTER 4

# OPERATING INSTRUCTIONS WESTINGHOUSE ELECTRIC AND MANUFACTURING COMPANY MODEL

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### Section I. GENERAL

**14. SCOPE.** This chapter contains information for the guidance of the personnel responsible for the operation of the Westinghouse Horizontal Cassette Changer. It also contains information on the operation of the equipment with the description and location of the controls.

### Section II. SERVICE UPON RECEIPT OF EQUIPMENT

**15. UNPACKING AND ASSEMBLING.** This equipment may be shipped in two cases.

a. When opening the crate, the horizontal carriage will be found up-ended and placed between the two uprights. The horizontal carriage should be removed from the crate, leaving the wrapping paper on, and laid aside until the uprights have been placed in position. The upright assembly is shipped completely assembled and it is necessary only to move it into place. On the four corners of the large U-shaped base casting will be found screws whereby leveling may be accomplished. On the rear member of the casting is found a 90° water-level glass. This is for the purpose of obtaining proper leveling, regardless of floor contours. Do not attempt to move the leveling screws with the weight of the uprights upon them. If, for example, it becomes necessary to make any adjustment of the four corners, jam a heavy screw driver or other wedge-shaped device between the base and the floor to take the weight off the leveling pad, make the adjustment, and remove the wedge. Attempting to move these leveling screws with the full weight of the casting upon them may result in a broken screw driver. Inasmuch as this unit operates on the principle of gravity and has no electrical devices of any type except its trip mechanism, the leveling is of extreme importance. After the uprights have been leveled, install the horizontal carriage. This can be accomplished by means of the eight hexagon machine bolts supplied. Fasten the carriage through the eight holes in the upright assembly. After these have been securely tightened, it will be possible

to remove the two long shipping bolts located approximately 6 inches from the bottom of the large chrome-plated columns of the upright. These bolts are intended solely for the purpose of securing the counterweights during shipment of the device. It is suggested that these bolts be kept handy for possible reshipment of the unit.

b. When the unit is packed in two cases, one case contains the mounting base, two upright columns, and the tie rod for joining the two upright columns. The other case contains the horizontal cassette shifting mechanism, compression device, push button, and cable. Unpack the unit, being careful not to drop or scratch the components in each case. Remove the mounting base and then insert in it the two vertical columns. Tighten the vertical columns in the base by means of four setscrews, using for this operation the small setscrew wrench found in the CAUTION envelope fastened to the column. Remove the tie rod from the case and fasten in place in top of the two support columns, fastening securely to the column by means of the four setscrews identical to those used in the base. Lift the horizontal cassette shifting mechanism to proper level and insert the eight bolts supplied through the back of the cassette changer upright support brackets and into the holes drilled in the back of the horizontal cassette shifting mechanism. Slide the lock washers over these bolts and screw the nuts on tight. Remove nuts from bolts inserted through upright chromium columns, which will be found 1 inch above the base. Withdraw bolts. This will loosen counterweight, and the complete cassette shift mechanism should now be allowed to move freely up and down the column. Level cassette changer base by screwing in or out the leveling screws mounted in the front and rear of each base foot. Adjust by centering bubble in both spirit levels mounted on the top left corner of cassette shifting mechanism housing. An additional "V" bracket is supplied and will be found in case No. 1, which can be used for additional bracing of the cassette changer by fastening the V-bracket to the wall; bolt open ends of the bracket to the upper tie rod by means of the two bolts and nuts which were used at the base column for fastening the counterweights. Attach closed end of the bracket to the wall with lag screws or bolts; insert female 110-volt fitting to proper receptacle in lower right corner of the cassette shifting mechanism, from the rear. This is the magnetic release push button and cable. Insert the male 110-volt fitting into available source of supply and depress attached push button to check operation. The amount of cushioning (vibration control) can be adjusted by movement in or out of the bracket-supporting plunger, found to be mounted at the top right side of the left upright column, viewing cassette changer from the rear. When the cassette shifting mechanism moves smoothly yet quickly, without vibration and jar, the adjustment is correct. The cassette changer is now ready for operation. Remove

wax paper from face of plexiglass panel. The black crinkled paint may be cleaned with a cloth saturated with any thin oil.

**16. DISASSEMBLING AND PACKING.** Reverse the procedure, as outlined in paragraph 15, packing the unit as originally received. Make certain that all parts are effectively braced to prevent movement within the case. Packing materials such as paper or excelsior should be employed. Cast parts should be especially well braced to prevent breakage. Chrome-plated or exposed metal parts should be coated with a light film of oil before packing.

### Section III. CONTROLS AND OPERATION

**17. CONTROLS AND OPERATION. a. Magnetic trip mechanism.** The magnetic trip mechanism is the means whereby the solenoid coil may be connected in parallel with the trip mechanism of the stereoscopic shift on the tube stand. This will eliminate the need of a separate push-button control for either device. By making a parallel connection between the cassette changer and the tube stand coils, one push button can operate both devices. The cassette changer trip mechanism has a small mercury switch inserted in one side of the coil. This unit will complete the solenoid circuit only when the mechanism is in the No. 1 position. It is purely a safety device to prevent the voltage from being on the trip coil for an excessive length of time. The trip mechanism can be operated either mechanically or electrically. Inasmuch as the unit will operate in one direction, only an indicator located in the upper right-hand side of the horizontal carriage is utilized to indicate the No. 1 and No. 2 positions of the moving frame which holds the cassettes. Make certain that before a stereoscopic exposure is attempted No. 1 shows in the small indicator block. To set the mechanism from the No. 2 to the No. 1 position (preparatory to taking a second radiograph), it is necessary to move down the handle on the right-hand edge of the horizontal carriage. The device cannot be cocked electrically.

**b. Plungerlike assembly.** In the back of the cassette changer will be found a plungerlike assembly, which is the means of cushioning the shock of the moving parts when changing from No. 1 to No. 2 position. This assembly utilizes a spring and air chamber for softening the shock of the moving carriage. In the event of excessive vibration when the change is made, loosen one of the two screws that hold this assembly and move this assembly in or out as required. In the event the cassette device is tripped and it does not catch hold satisfactorily, it will probably mean that the plunger assembly is advanced too far.

**c. Vertical scale.** On the right-hand column, facing the cassette

changer, will be found a long vertical scale. This scale can be adjusted by means of the holes that are drilled in it, made to line up with the scale on the vertical column of the tube stand. This scale is properly adjusted at the point where the scale-reading indicated on the cassette changer is the same as that on the stereo-shift when the tube is directed at the exact center of the cassette.

## CHAPTER 5

### MAINTENANCE INSTRUCTIONS STANDARD X-RAY COMPANY MODEL

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#### Section I. GENERAL

**18. SCOPE.** This chapter contains information for first and second echelon maintenance of the Standard Motor Driven Horizontal Model HCC Cassette Changer.

#### Section II. PREVENTIVE MAINTENANCE SERVICES

**19. BEARINGS** The bearings of the motor-reducing gears should be oiled at least once every 6 months with a good medium grade of machine oil.

**20. OPERATING LEVER.** Lubricate as indicated in paragraph 19.

**21. RATCHET WHEEL SHAFT OF THE RELAY.** Lubricate as indicated in paragraph 19. If the apparatus should fail to operate satisfactorily, the trouble will probably be caused by lack of lubrication of the moving parts. Care should be taken not to allow oil to run down onto the small bakelite shoe which is just below the motor and which serves to prevent excessive coasting of the motor after the current has been turned off.

**22. MISCELLANEOUS.** **a.** If the motor-drive equipment should become inoperative, it can be disconnected from the cassette carriage by removing the screw from the center of the bearing on the arm which attaches the motor mechanism to the cassette carriage. The cassette carriage can then be shifted manually.

**b.** If the carriage bumps at either end of its travel, loosen the long post to which the lever is attached on the cassette carriage frame and turn it about  $\frac{1}{8}$  of a turn. This will either correct the bumping or it will cause the mechanism to bump harder. If the mechanism bumps harder, loosen this post and turn it about  $\frac{1}{8}$  to  $\frac{1}{4}$  turn in the opposite direction.

## CHAPTER 6

# MAINTENANCE INSTRUCTIONS GENERAL ELECTRIC X-RAY CORPORATION MODEL

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### Section I. GENERAL

**23. SCOPE.** This chapter contains information for first and second echelon maintenance of the General Electric Motor-Driven Cassette Changer.

### Section II. PREVENTIVE MAINTENANCE SERVICES

**24. MOTOR BEARINGS.** Oil the two motor bearings, 6R05288 (fig. 7), with a good grade medium oil once every 6 months.

**25. BRAKE ADJUSTMENT.** It may be necessary to adjust the brake, 6R05310 (fig. 6), in winter and summer. When the operating temperature is high the gear grease may become less viscous. In this case, the mechanism may become too free and the unit may recycle until the control line switch is turned off. (See par. 10g.)

## CHAPTER 7

# MAINTENANCE INSTRUCTIONS WESTINGHOUSE ELECTRIC AND MANUFACTURING COMPANY MODEL

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### Section I. GENERAL

**26. SCOPE.** This chapter contains information for first and second echelon maintenance of the Westinghouse Horizontal Cassette Changer.

### Section II. PREVENTIVE MAINTENANCE SERVICES

**27. VERTICAL CARRIAGE ASSEMBLIES.** These assemblies, operating over the chrome-plated columns, are properly adjusted. If the rollers are found to be too tight or too loose, it will be necessary to move one roller. In each set of roller-bearing assemblies, there will be found one on an eccentric stud which permits the bearing to be moved closer to, or farther away from, the vertical column. This is accomplished by tightening or loosening the stud as required.

**28. DUST.** Keep track and bearings clean and free of dust. Wipe tracks frequently with a damp cloth. Bearings should be removed and washed thoroughly in kerosene or gasoline and repacked with a good grade of light lubricating grease or vaseline.

**29. CHANGE OR REPLACEMENT OF COMPRESSION BAND.** To replace winding attachment assembly, slide assembly upward until free from winding attachment sliding support. Replace new assembly. To replace band, press ratchet pawl counterclockwise and hold depressed with finger of right hand. At the same time grasp compression band with left hand and pull until completely unwound. Remove belt holder and slip band from it. Insert the belt holder into the new band, replace the belt holder in the roller, and wind the belt onto the roller by turning the handle clockwise. To replace roller, remove the two screws from each end; roller can then be lifted out and replaced. Replace the two screws.

## APPENDIX

## STANDARD NOMENCLATURE LIST OF PARTS

1. ITEM NO. 60117, CASSETTE CHANGER, STEREOGRAPHIC, UPRIGHT,  
MAGNETICALLY CONTROLLED, STANDARD X-RAY COMPANY.

Medical Dept. No.	Nomenclature	Figure No.
<i>C o m m o n P a r t s</i>		
SR00045	SCREW, 10-32 x $\frac{3}{8}$ INCH, R.H.M.....	
SR00072	CORD, NEOPRENE, NO. 18, TWO CONDUCTOR .....	
SR00121	SCREW, 8-32 x $\frac{1}{4}$ INCH, O.H.M.....	
SR00122	SCREW, 8-32 x $\frac{5}{16}$ INCH, O.H.M.....	
SR00123	SCREW, 8-32 x $\frac{3}{8}$ INCH, O.H.M.....	
SR00130	SCREW, 6-32 x $\frac{3}{8}$ INCH, O.H.M.....	
SR00131	SCREW, 6-32 x $\frac{5}{16}$ INCH, O.H.M.....	
SR00135	SCREW, 10-32 x $\frac{3}{8}$ INCH, O.H.M.....	
SR00145	SCREW, 10-32 x $1\frac{1}{2}$ INCH, R.H.M.....	
SR00229	WASHER, LOCK, SCREW SIZE $\frac{1}{4}$ .....	
SR00236	SCREW, 6-32 x $\frac{1}{4}$ INCH, B.H.M.....	
SR00265	SCREW, 8-32 x $\frac{5}{8}$ INCH, R.H.M.....	
SR00304	WASHER, SCREW SIZE 8.....	
SR00358	WASHER, LOCK, SCREW SIZE $\frac{1}{2}$ .....	
SR00370	WASHER, SCREW SIZE $\frac{1}{4}$ , BRASS.....	
SR00379	BOLT, $\frac{5}{16}$ -18 x 1 INCH, HEX H.M.....	
SR00422	NUT, $\frac{5}{16}$ x 18, HEX.....	
SR00436	SCREW, 6-32 x $\frac{5}{8}$ INCH, R.H.M.....	
SR00473	SCREW, 4-36 x $\frac{1}{8}$ INCH, R.H.M.....	
SR00475	SCREW, $\frac{3}{8}$ -16 x $1\frac{1}{4}$ INCH, FILL. H.M.....	
SR00476	SCREW, 8-32 x $\frac{3}{4}$ INCH, B.H.M.....	
SR00477	SCREW, 8-32 x $\frac{1}{4}$ INCH, FILL. H.M.....	
SR00478	SCREW, $\frac{1}{4}$ -20 x $\frac{3}{4}$ INCH, FL. H.M.....	
SR00479	SCREW, $\frac{1}{4}$ -20 x $\frac{3}{8}$ INCH, R.H.M.....	
SR00480	SCREW, 6-32 x $\frac{3}{16}$ INCH, B.H.M.....	
SR00481	SCREW, $\frac{1}{4}$ -20 x $1\frac{1}{4}$ INCH, FL. H.M.....	
SR00482	SCREW, $\frac{1}{4}$ -20 x $\frac{5}{8}$ INCH, R.H.M.....	
SR00483	SCREW, 8-32 x $\frac{5}{8}$ INCH, O.H.M.....	
SR00484	SCREW, $\frac{1}{4}$ -20 x $1\frac{3}{8}$ INCH, B.H.M.....	
SR00485	SCREW, $\frac{3}{8}$ -16 x $1\frac{3}{4}$ INCH, FILL. H.M.....	
SR00486	SCREW, 4-36 x $\frac{1}{4}$ INCH, FL. H.M.....	
SR00488	SCREW, 8-32 x $\frac{1}{8}$ INCH, O.H.M.....	
SR00489	SCREW, $\frac{5}{16}$ -18 x 1 INCH, R.H.M.....	
SR00490	SCREW, $\frac{1}{4}$ -20 x $\frac{9}{16}$ INCH, FL. H.M.....	
SR00491	SCREW, $\frac{5}{16}$ -18 x 2 INCH, R.H.M.....	
SR00492	SCREW, $\frac{5}{16}$ -18 x $\frac{3}{8}$ INCH, BRISTOL HEAD .....	
SR00565	NUT, $\frac{5}{16}$ x 20, HEX.....	
SR00566	SCREW, $\frac{3}{8}$ -18 x $2\frac{1}{2}$ INCH, R.H.M.....	
SR00570	SETSCREW, 10-32 x $\frac{7}{16}$ INCH, HEAD- LESS, OVAL PT.....	

Medical Dept. No.	Nomenclature	Figure No.
SR00571	SETSCREW, $\frac{1}{4}$ -20 x $\frac{5}{8}$ INCH, HEAD-LESS, OVAL PT.....	
SR00573	CORD, NEOPRENE, No. 18, FOUR CONDUCTOR, STRANDED .....	
SR00578	SCREW, $\frac{5}{16}$ -18 x 1 INCH, CAP.....	
	<i>Uncommon Parts</i>	
*6R04452	PANEL, CENTER, PLASTACCLE.....	
*6R04454	DOOR, BAKELITE .....	
*6R04456	BAND, COMPRESSION .....	
*6R04458	RELAY, MAGNETIC RELEASE.....	
*6R04460	MOTOR, COMPLETE: Assembly.....	
*6R04462	BUTTON, PUSH, MAGNETIC RELEASE Assembly .....	
*6R04464	DRUM, BRAKE, MOTOR.....	
*6R04466	BUTTON, STOP, COMPRESSION BAND .....	
*6R04468	KNOB, DOOR .....	
*6R04470	HINGE, DOOR .....	
6R04472	CHAIN, THREE LINK, COUNTER- WEIGHT, 38 INCH .....	
6R04474	CORE, ROLLER BEARING.....	
6R04476	BEARING, ROLLER, I.D. $\frac{3}{8}$ INCH, O.D. $1\frac{3}{16}$ INCH .....	
6R04478	ROD, FOR HORIZONTAL MOVE- MENT OF CASSETTE CARRIAGE, DIA. 1 INCH .....	
	LENGTH 5 FT .....	
6R04480	HOLDER, CASSETTE, 37 INCH.....	
6R04482	CARRIAGE, CASSETTE .....	
6R04484	ARM, LEVER, 10 x 1 x $\frac{1}{4}$ INCH.....	
6R04486	ARM, LEVER, 17 x 1 x $\frac{1}{4}$ INCH.....	
6R04488	JUNCTION, LEVER WITH ROLLER- BEARING, $1\frac{1}{2}$ x $1\frac{1}{2}$ x $\frac{3}{8}$ INCH.....	
6R04490	BUSHING, O.D. $\frac{7}{16}$ INCH, $\frac{1}{2}$ INCH LONG .....	
6R04492	FRAME, X, CAST IRON .....	
6R04494	WASHER, RUBBER, CUSHION, 4 INCH	
6R04496	PULLEY, COMPLETE: Assembly with casting and pulley wheel.....	
6R04498	ROD, TIE, FOR X COUPLING: Screw gage $\frac{5}{16}$ -24 x 23 INCH.....	
6R04500	COUPLING, X, SCREW GAGE $\frac{5}{16}$ -24 $\times 3\frac{1}{8}$ INCH .....	
6R04502	TRACK, GUIDE, COMPRESSION BAND CASTING .....	
6R04504	ROD, BAND, COMPRESSION .....	

\*To be requisitioned, when required, from the supply depot. (No asterisk indicates that the item is not stocked as a spare part, but can be obtained by special requisition.)

Medical Dept. No.	Nomenclature	Figure No.
6R04506	BASE, CAST IRON.....	
6R04508	COLUMN, VERTICAL, DIA. 3-INCH.....	
6R04510	BRACKET, ROLLER, UPPER RIGHT.....	
6R04512	BRACKET, ROLLER, UPPER LFFT.....	
6R04514	BRACKET, ROLLER, LOWER RIGHT.....	
6R04516	BRACKET, ROLLER, LOWER LEFT.....	
6R04518	ROD, LOCKING, 52-INCH.....	
6R04520	KNOB, LOCKING ROD.....	
6R04522	CLAMP, LOCKING ROD, RIGHT.....	
6R04524	CLAMP, LOCKING ROD, LEFT.....	
6R04526	WASHER, RUBBER, CASTING CHECK, $\frac{7}{32}$ INCH THICK.....	
6R04528	FRAME, PLASTACCLE, CENTER PANEL.....	
6R04530	CASTING, END, MAIN BOX, LEFT.....	
6R04532	CASTING, END, MAIN BOX, RIGHT.....	
6R04534	CASTING, COMPRESSION BAND, RIGHT UPPER.....	
6R04536	CASTING, COMPRESSION BAND, LEFT UPPER.....	
6R04538	CASTING, COMPRESSION BAND, RIGHT LOWER.....	
6R04540	KNOB, COMPRESSION BAND.....	
6R04542	RELAY, COMPLETE, Assembly.....	
6R04544	HOOK, PUSH BUTTON.....	
6R04546	COUNTERWEIGHT.....	
6R04548	ROLLER, DIA. 1 $\frac{1}{4}$ -INCH, 5 $\frac{1}{16}$ -INCH BORE.....	
6R04550	CASTING, COMPRESSION BAND, LEFT LOWER.....	
6R04552	PAD, LEVELING.....	

2. ITEM NO. 60117, CASSETTE CHANGER, STEREOSCOPIC, UPRIGHT,  
MAGNETICALLY CONTROLLED, GENERAL ELECTRIC X-RAY COR-  
PORATION.

Medical Dept. No.	Nomenclature	Figure No.
<i>Common parts</i>		
SR00044	SCREW, 10-32 x $\frac{7}{16}$ INCH, R.H.M.....	6
SR00045	SCREW, 10-32 x $\frac{3}{8}$ INCH, R.H.M.....	
SR00111	SCREW, 8-32 x $\frac{1}{4}$ INCH, R.H.M.....	
SR00114	SCREW, 8-32 x $\frac{3}{4}$ INCH, R.H.M.....	
SR00141	SCREW, 10-32 x $\frac{5}{16}$ INCH, R.H.M.....	
SR00142	SCREW, 10-32 x $\frac{3}{4}$ INCH, R.H.M.....	

Medical Dept. No.	Nomenclature	Figure No.
SR00143	SCREW, 10-32 x 1 INCH, R.H.M.....	
SR00144	SCREW, 10-32 x 1 $\frac{1}{4}$ INCH, R.H.M.....	
SR00226	SCREW, $\frac{1}{4}$ -20 x $\frac{3}{4}$ INCH, R.H.M.....	
SR00229	WASHER, LOCK, SCREW SIZE $\frac{1}{4}$ .....	
SR00323	SCREW, 8-32 x 1 INCH, FILL. H.M.....	
SR00330	NUT, 10 x 32, HEX.....	
SR00336	WASHER, SCREW SIZE $\frac{3}{8}$ .....	
SR00347	NUT, 6 x 32, HEX, BRASS.....	
SR00482	SCREW, $\frac{1}{4}$ -20 x $\frac{5}{8}$ INCH, R.H.M.....	
SR00555	SETSCREW, $\frac{1}{4}$ -20 x $\frac{1}{4}$ INCH, ALLEN HEAD, OVAL PT.....	
SR00556	SCREW, 6-32 x $\frac{5}{32}$ INCH, B.H.M.....	
SR00557	SCREW, 6-32 x 1 $\frac{1}{2}$ INCH, R.H.M.....	
SR00558	SETSCREW, $\frac{1}{4}$ -20 x $\frac{1}{2}$ INCH, ALLEN HEAD, OVAL PT.....	
SR00559	SCREW, 10-32 x $\frac{1}{4}$ INCH, FL. H.M.....	
SR00560	SCREW, 10-32 x $\frac{1}{2}$ INCH, B.H.M.....	
SR00561	SCREW, 10-32 x $\frac{3}{8}$ INCH, FL. H.M.....	
SR00562	SCREW, $\frac{3}{8}$ -16 x $\frac{5}{8}$ INCH, R.H.M.....	6
SR00563	SCREW, $\frac{1}{4}$ -20 x 2 INCH, FILL. H.M.....	
SR00564	SCREW, $\frac{1}{4}$ -20 x $1\frac{3}{16}$ INCH, FILL. H.M.....	
SR00567	BOLT, $\frac{3}{8}$ -16 x 1 INCH, R.H.M.....	
SR00568	BOLT, $\frac{3}{8}$ -16 x 1 $\frac{1}{4}$ INCH, HEX H.M.....	6
SR00569	BOLT, 10-32 x 5 INCH, R.H.M.....	
SR00573	CORD, NEOPRENE, No. 18, 4-CONDUCTOR, STRANDED .....	
<i>Uncommon Parts</i>		
6R05252	BASE, CAST IRON .....	
6R05254	COLUMN, UPRIGHT, STEEL-FABRICATED, LEFT .....	6
6R05256	COLUMN, UPRIGHT, STEEL-FABRICATED, RIGHT .....	6
6R05258	PANEL, REAR .....	
6R05260	TOP, CAST IRON .....	6
6R05262	HOUSING, CAST IRON, LEFT SIDE .....	6
6R05264	HOUSING, CAST IRON, RIGHT SIDE .....	6
6R05266	HOUSING, CAST IRON, TOP .....	6
6R05268	HOUSING, CAST IRON, BOTTOM .....	6
6R05270	CRANK, HEIGHT-ADJUSTING .....	6.7
6R05272	GEAR, RAIL, HEIGHT-ADJUSTING .....	
6R05274	SCALE, HEIGHT INDICATOR .....	6
6R05276	PLATE, INDICATING .....	6
6R05278	PAD, BASE-LEVELING .....	6
6R05280	SCREW, BRAKE .....	6
6R05282	IMMOBILIZER, PATIENT, COMPLETE with roller and crank .....	
6R05284	HOLDER, BAND, PATIENT-IMMOBILIZER .....	6

Medical Dept. No.	Nomenclature	Figure No.
6R05286	DISPENSER, PAPER, COMPLETE, Assembly .....	6
6R05288	BEARING, MOTOR .....	7
6R05290	HOUSING, MOTOR AND BRAKE.....	6
6R05292	PIN, LOCKING, 1-INCH .....	7
6R05294	SLEEVE, CRANKSHAFT .....	7
6R05296	SETSCREW, SLEEVE .....	7
6R05298	RAIL, GEAR .....	.....
6R05300	CRANKSHAFT .....	.....
6R05302	SWITCH, HAND, SINGLE BUTTON, COMPLETE, Assembly, with 11-ft. cable and hanger .....	.....
6R05304	ROLL, PAPER, 170 FEET x 13 INCH.....	.....
6R05306	MOTOR, ELECTRIC, COMPLETE, Assembly .....	.....
6R05308	SWITCH, SAFETY, TOGGLE, COM- PLETE, Assembly .....	.....
6R05310	BRAKE, COMPLETE, Assembly .....	.....
6R05312	CHANNEL, CASSETTE .....	6
6R05314	BAND, TENSION, CASSETTE HOLDER, 17½ INCH .....	.....
6R05316	CARRIAGE, CASSETTE, COMPLETE, Assembly .....	.....
6R05318	AXIS, VERTICAL, COMPLETE, Assembly, with arms for movement of cassette carriage .....	.....
6R05320	PANEL, FRONT, COMPLETE, Assembly, with frame .....	.....
6R05322	GEAR DRIVING, RAIL GEAR.....	.....
6R05324	SPROCKET, CRANK .....	7
6R05326	SPROCKET, DRIVESHAFT .....	7
6R05328	GEAR, DRIVESHAFT .....	.....
6R05330	WHEEL, RATCHET .....	.....
6R05332	TRACK, GUIDE, HOUSING .....	.....
6R05334	REST, CHIN .....	.....
6R05336	STUD, THREADED .....	6
6R05338	STOP, HEIGHT ADJUSTMENT .....	6
6R05340	EARS, for wall mounting.....	6
6R05342	PIN, for holding gear in place.....	7
6R05344	DRIVESHAFT .....	7
6R05346	CAP, for left side installation.....	7

**3. ITEM NO. 60117, CASSETTE CHANGER, STEREOSCOPIC, UPRIGHT,  
MAGNETICALLY CONTROLLED, WESTINGHOUSE ELECTRIC AND  
MANUFACTURING COMPANY.**

Medical Dept. No.	Nomenclature	Figure No.
<i>C o m m o n P a r t s</i>		
SR00003	SCREW, 8-32 x $\frac{1}{2}$ INCH, R.H.M.....	
SR00010	SCREW, 8-32 x $\frac{3}{8}$ INCH, R.H.M.....	
SR00015	SCREW, 8-32 x 1 INCH, R.H.M.....	
SR00017	NUT, 8 x 32, HEX.....	
SR00040	SCREW, 6-32 x $\frac{1}{4}$ INCH, R.H.M.....	
SR00043	NUT, 6 x 32, HEX.....	
SR00045	SCREW, 10-32 x $\frac{3}{8}$ INCH, R.H.M.....	
SR00103	SCREW, 6-32 x $\frac{1}{8}$ INCH, R.H.M.....	
SR00105	SCREW, 6-32 x $\frac{3}{8}$ INCH, R.H.M.....	
SR00107	SCREW, 6-32 x $\frac{1}{2}$ INCH, R.H.M.....	
SR00111	SCREW, 8-32 x $\frac{1}{4}$ INCH, R.H.M.....	
SR00142	SCREW, 10-32 x $\frac{3}{4}$ INCH, R.H.M.....	
SR00144	SCREW, 10-32 x $1\frac{1}{4}$ INCH, R.H.M.....	
SR00151	WASHER, LOCK, SCREW SIZE 10.....	
SR00152	WASHER, LOCK, SCREW SIZE 8.....	
SR00153	WASHER, LOCK, SCREW SIZE 6.....	
SR00154	WASHER, LOCK, SCREW SIZE 4.....	
SR00185	NUT, 8 x 32, HEX, BRASS.....	
SR00224	SCREW, $\frac{1}{4}$ -20 x $\frac{1}{2}$ INCH, R.H.M.....	
SR00225	SCREW, 2 x $\frac{1}{4}$ INCH, TYPE "U", P.K. DRIVE .....	
SR00229	WASHER, LOCK, SCREW SIZE $\frac{1}{4}$ .....	
SR00230	NUT, $\frac{1}{4}$ x 20, HEX.....	
SR00234	WASHER, SHAKEPROOF, SCREW, SIZE 4, INT.....	
SR00244	WASHER, SCREW SIZE 4.....	
SR00265	SCREW, 8-32 x $\frac{5}{8}$ INCH, R.H.M.....	
SR00266	SCREW, 8-32 x $1\frac{1}{8}$ INCH, R.H.M.....	
SR00292	SCREW, 10-32 x $1\frac{1}{8}$ INCH, R.H.M.....	
SR00293	WASHER, SCREW SIZE $\frac{1}{4}$ .....	
SR00297	WASHER, SCREW SIZE 10.....	
SR00300	SCREW, 10-32 x $\frac{1}{2}$ INCH, R.H.M.....	
SR00301	SETSCREW, $\frac{3}{8}$ -16 x $\frac{3}{8}$ INCH, ALLEN HEAD .....	
SR00304	WASHER, SCREW SIZE 8.....	
SR00326	SCREW, 6-32 x $\frac{7}{8}$ INCH, R.H.M.....	
SR00330	NUT, 10 x 32, HEX.....	
SR00336	WASHER, SCREW SIZE $\frac{3}{8}$ .....	
SR00339	SCREW, 8-32 x $\frac{1}{2}$ INCH, R.H.M., BRASS.....	
SR00359	WASHER, LOCK, SCREW, SIZE $\frac{3}{8}$ .....	
SR00370	WASHER, SCREW SIZE $\frac{1}{4}$ , BRASS.....	
SR00384	SCREW, 4-40 x $\frac{1}{4}$ INCH, R.H.M.....	
SR00385	NUT, 4 x 40, HEX.....	
SR00473	SCREW, 4-36 x $\frac{1}{8}$ INCH, R.H.M.....	

Medical Dept. No.	Nomenclature	Figure No.
SR00481	SCREW, $\frac{1}{4}$ -20 x $1\frac{1}{4}$ INCH, FL. H.M.....	.....
SR00482	SCREW, $\frac{1}{4}$ -20 x $\frac{5}{8}$ INCH, R.H.M.....	.....
SR00525	SCREW, $\frac{3}{8}$ -16 x 5 INCH, HEX HEAD M.....	.....
SR00526	NUT, $\frac{3}{8}$ -16, HEX.....	.....
SR00527	SCREW, 2-56 x $\frac{1}{4}$ INCH, FL.H.M.....	.....
SR00528	SETSCREW, $\frac{1}{4}$ -20 x $\frac{3}{8}$ INCH, ALLEN HEAD, OVAL PT.....	.....
SR00529	SCREW, $\frac{1}{4}$ -20 x $1\frac{1}{2}$ INCH, R.H.M.....	.....
SR00530	SCREW, $\frac{3}{8}$ -16 x $1\frac{3}{8}$ INCH, HEX H.M.....	.....
SR00532	SCREW, $\frac{3}{8}$ -16 x $1\frac{1}{4}$ INCH, HEX H.M.....	.....
SR00533	SCREW, 10-32 x $\frac{1}{2}$ INCH, FL.H.M.....	.....
SR00534	SCREW, 8-32 x $\frac{1}{4}$ INCH, FL.H.M.....	.....
SR00535	SCREW, 10 x $\frac{3}{4}$ INCH, O.H.WOOD.....	.....
SR00536	SCREW, 10-32 x $\frac{3}{8}$ INCH, B.H.M.....	.....
SR00537	SETSCREW, 10-32 x $\frac{1}{8}$ INCH, ALLEN HEAD, OVAL PT.....	.....
SR00538	SCREW, 6-32 x $\frac{1}{4}$ INCH, FL.H.M.....	.....
SR00539	SCREW, 10-32 x $\frac{7}{16}$ INCH, FL.H.M.....	.....
SR00540	SCREW, $\frac{1}{4}$ -20 x $\frac{3}{4}$ INCH, HEX H.M.....	.....
SR00541	SCREW, 4-40 x $\frac{3}{8}$ INCH, R.H.M.....	.....
SR00542	RIVET, $\frac{1}{8}$ DIA. x $\frac{1}{8}$ INCH LENGTH, FL.H.M.....	.....
SR00543	RIVET, $\frac{1}{8}$ INCH DIA. x $\frac{3}{16}$ LENGTH, R.H.M.....	.....
SR00544	SCREW, 8-32 x $\frac{5}{8}$ INCH, B.H.M.....	.....
SR00545	NUT, CAP, 8-32, HEX.....	.....
SR00546	SCREW, 10-32 x $1\frac{1}{4}$ INCH, FL.H.M.....	.....
SR00547	SCREW, 8-32 x $1\frac{1}{4}$ INCH, FL.H.M.....	.....
SR00548	SCREW, 8-32 x $1\frac{1}{2}$ INCH, FL.H.M.....	.....
SR00549	SCREW, 4-40 x $\frac{9}{16}$ INCH, R.H.M.....	.....
SR00550	SCREW, $\frac{1}{4}$ -20 x $1\frac{5}{16}$ INCH, FL.H.M.....	.....
SR00551	WASHER, SHAKEPROOF, SCREW SIZE $\frac{1}{4}$ , INT.....	.....
SR00552	SCREW, 4-40 x $\frac{5}{16}$ INCH, B.H.M.....	.....
SR00553	SCREW, 6-32 x $\frac{3}{16}$ INCH, FL.H.M.....	.....
<i>Uncommmon Parts</i>		
*6R04752	BEARING, VERTICAL CARRIAGE .....	.....
*6A04754	DOOR, PLEXIGLASS .....	.....
*6R04756	STRIP, SUPPORT, LEFT .....	.....
*6A04758	STRIP, SUPPORT, RIGHT .....	.....
*6R04760	SWITCH, MERCURY .....	.....
*6R04762	TRIP, MAGNETIC .....	.....
6R04764	CASTING, BASE .....	.....
6R04766	PAD, FLOOR, ADJUSTABLE .....	.....
6R04768	COLUMN, MAIN, RIGHT .....	.....
6R04770	SCALE, INDICATOR, VERTICAL TRAVEL .....	.....
6R04772	HOOD, RIGHT COUNTERWEIGHT PULLEY .....	.....

\*To be requisitioned, when required, from the supply depot. (No asterisk indicates that the item is not stocked as a spare part, but can be obtained by special requisition.)

Medical Dept. No.	Nomenclature	Figure No.
6R04774	PULLEY, CABLE, COUNTERWEIGHT .....	
6R04776	AXLE, PULLEY, COUNTERWEIGHT CABLE .....	
6R04778	WASHER, THIN, COUNTERWEIGHT CABLE PULLEY AXLE .....	
6R04780	WASHER, THICK, COUNTERWEIGHT CABLE PULLEY AXLE .....	
6R04782	BUMPER, RUBBER, VERTICAL TRAVEL STOP .....	
6R04784	BUSHING, BUMPER, VERTICAL TRAVEL STOP .....	
6R04786	CABLE, STEEL, COUNTERWEIGHT .....	
6R04788	COUNTERWEIGHT, MAIN .....	
6R04790	COLUMN, MAIN, LEFT .....	
6R04792	HOOD, LEFT COUNTERWEIGHT PULLEY .....	
6R04794	CROSS-STRIP, PULLEY HOOD .....	
6R04796	NAMEPLATE, "WESTINGHOUSE" .....	
6R04798	PIN, DOWEL, for attaching counter- weight cable to upper bearing carriage .....	
6R04800	WINDOW, VERTICAL TRAVEL INDICATOR SCALE .....	
6R04802	BEARING, BALL, VERTICAL CARRIAGE .....	
6R04804	SCREW, ECCENTRIC, for vertical car- riage bearing and roller .....	
6R04806	BUSHING, PIVOT, RELEASE HANDLE .....	
6R04808	ROLLER, MICARTA, VERTICAL CARRIAGE .....	
6R04810	BUSHING, MICARTA ROLLER .....	
6R04812	SLEEVE, VERTICAL CARRIAGE: Casting .....	
6R04814	HANDLE, LOCKING, VERTICAL TRAVEL .....	
6R04816	SHOE, LOCKING, VERTICAL TRAVEL .....	
6R04818	CHASSIS, COMPLETE: Assembly .....	
6R04820	NAMEPLATE, WESTINGHOUSE NUMBER AND STYLE IDENTIFI- CATION .....	
6R04822	HINGE, HALF, STATIONARY: For door .....	
6R04824	SHIM, HINGE, STATIONARY: For door .....	
6R04826	GUARD, LEAD, HINGES, DOOR .....	
6R04828	HINGE, HALF, MOVING: For door .....	
6R04830	FRAME, DOOR LOCK .....	
6R04832	CATCH, DOOR LOCK .....	
6R04834	SHAFT, DOOR LOCK .....	
6R04836	SPRING, DOOR LOCK .....	
6R04838	BUTTON, DOOR LOCK RELEASE LEVER .....	

Medical Dept. No.	Nomenclature	Figure No.
6R04840	COVER, DOOR LOCK .....	.....
6R04842	HOOK, LATCH, CASSETTE SHIFT.....	.....
6R04844	BUSHING, PIVOT, LATCH HOOK.....	.....
6R04846	SPRING, LATCH HOOK .....	.....
6R04848	SPRING, BUMPER, COMPLETE: Assembly. ....	.....
6R04850	HOUSING, PLUNGER, SPRING BUMPER .....	.....
6R04852	GUIDE, END, SPRING BUMPER.....	.....
6R04854	SPRING, COMPRESSION, SPRING BUMPER .....	.....
6R04856	PLUNGER, SPRING, BUMPER.....	.....
6R04858	BUMPER, RUBBER, SPRING BUMPER.....	.....
6R04860	STRAP, MOUNTING, SPRING BUMPER .....	.....
6R04862	COLLAR, FELT: For spring bumper mount- ing strap. ....	.....
6R04864	BUMPER, RUBBER: For cassette carriage stop.....	.....
6R04866	BUSHING, BUMPER: For cassette carriage stop.....	.....
6R04868	BRACKET, RUBBER BUMPER.....	.....
6R04870	HOCK: For cassette shift release lever.....	.....
6R04872	BUSHING, PIVOT: For release lever hook.....	.....
6R04874	BUMPER, RELEASE LEVER HOOK.....	.....
6R04876	SPRING RETURN: For release lever hook.....	.....
6R04878	ROD, CONNECTING, CASSETTE SHIFT RELEASE .....	.....
6R04880	PIN, CONNECTING ROD: For release lever and cassette shift.....	.....
6R04882	GUIDE, SUPPORT, CONNECTING ROD .....	.....
6R04884	HANDLE, RELEASE, CASSETTE SHIFT .....	.....
6R04886	PIN, RELEASE HANDLE: For connecting rod and cassette shift.....	.....
6R04888	BRACKET, SUPPORT, RELEASE HANDLE .....	.....
6R04890	PLATE, INDICATOR, SLIDING: For cassette shift. ....	.....
6R04892	GUIDE: For sliding indicator plate.....	.....
6R04894	BUSHING, SLIDING INDICATOR.....	.....
6R04896	BUMPER, SLIDING INDICATOR.....	.....
6R04898	BUSHING: For sliding indicator bumper.....	.....
6R04900	SPRING, RETURN SLIDING INDI- CATOR .....	.....
6R04902	HOUSING: For sliding indicator plate.....	.....
6R04904	EYELET: For sliding indicator window.....	.....

Medical Dept. No.	Nomenclature	Figure No.
6R04906	CARRIAGE, CASSETTE, SHEET METAL .....	.....
6R04908	ARM, CATCH, LATCH HOOK.....	.....
6R04910	ARM, CATCH, RELEASE LEVER HOOK .....	.....
6R04912	PIN, GUIDE, PLUNGER CATCH.....	.....
6R04914	SPRING, PLUNGER CATCH, CASSETTE .....	.....
6R04916	ROLLER, END, CASSETTE CARRIAGE.....	.....
6R04918	BUSHING: For cassette carriage end roller.....	.....
6R04920	SPACER, CASSETTE CARRIAGE END ROLLER .....	.....
6R04922	ROLLER, CENTER, CASSETTE CARRIAGE .....	.....
6R04924	BUSHING, CENTER ROLLER.....	.....
6R04926	CHANNEL, SUPPORT, CASSETTE.....	.....
6R04928	GUIDE, CHANNEL .....	.....
6R04930	SCREW, THUMB, CHANNEL SUPPORT .....	.....
6R04932	BRACKET, CASSETTE, ADJUSTABLE.....	.....
6R04934	NUT, THUMB, CASSETTE BRACKET.....	.....
6R04936	SPRING, PRESSURE, CASSETTE CHANNEL .....	.....
6R04938	SPRING, PRESSURE, CASSETTE BACK .....	.....
6R04940	SEGMENT, ROCKING, CASSETTE SHIFT .....	.....
6R04942	BUSHING, PIVOT, SEGMENT.....	.....
6R04944	STRIP, BRASS, LEFT SEGMENT.....	.....
6R04946	STRIP, BRASS, RIGHT SEGMENT.....	.....
6R04948	WEIGHT, ROUND, SEGMENT.....	.....
6R04950	BAR, TIE, SLOTTED: Attaches rocking segments together.....	.....
6R04952	BUSHING, PIVOT: For tie bar.....	.....
6R04954	LEVER, COCKING, CASSETTE SHIFT.....	.....
6R04956	BUSHING, COCKING LEVER AND TIE BAR .....	.....
6R04958	SCREW, SHOULDER, COCKING LEVER AND TIE BAR.....	.....
6R04960	GUIDE, CABLE, STEEL .....	.....
6R04962	BUSHING, STEEL CABLE GUIDE.....	.....
6R04964	SCREW, SHOULDER, STEEL CABLE GUIDE .....	.....
6R04966	HANDLE, COCKING, CASSETTE SHIFT .....	.....
6R04968	BUSHING, PIVOT, COCKING HANDLE .....	.....
6R04970	CABLE, STEEL, FLEXIBLE, $\frac{1}{16}$ -INCH DIA., 25 $\frac{1}{2}$ -INCH LENGTH.....	.....

Medical Dept. No.	Nomenclature	Figure No.
6R04972	LUG, CABLE, STEEL .....	.....
6R04974	SOLENOID, MAGNETIC TRIP, COMPLETE: Assembly .....	.....
6R04976	COIL, SOLENOID .....	.....
6R04978	SPRING, PLUNGER, MAGNETIC TRIP, SOLENOID .....	.....
6R04980	PLUNGER, SOLENOID, MAGNETIC TRIP .....	.....
6R04982	PIN, MAGNETIC TRIP, SOLENOID PLUNGER .....	.....
6R04984	HOUSING, MAGNETIC TRIP, SOLENOID .....	.....
6R04986	PLATE, INSULATOR: At bottom of solenoid .....	.....
6R04988	BUSHING, INSULATING, SOLENOID TERMINAL .....	.....
6R04990	STRIP, INSULATING, SOLENOID TERMINAL .....	.....
6R04992	CAP, TERMINAL, SOLENOID .....	.....
6R04994	CLAMP, CABLE, MAGNETIC TRIP, SOLENOID .....	.....
6R04996	LEVER, CONNECTING, MAGNETIC TRIP .....	.....
6R04998	WASHER, RUBBER, SOLENOID PLUNGER .....	.....
6R05000	PLATE, MOUNTING, RECEPTACLE .....	.....
6R05002	RECEPTACLE, MALE, RECESSED, TWO-PRONG, MAGNETIC TRIP .....	.....
6R05004	CATCH, CASSETTE PLUNGER .....	.....
6R05006	PLUG, MAGNETIC CABLE FEMALE CONNECTOR .....	.....
6R05008	PLATE, MOUNTING, MERCURY SWITCH .....	.....
6R05010	PIN, STOP, MERCURY SWITCH BRACKET .....	.....
6R05012	SPACER, MERCURY SWITCH MOUNTING PLATE .....	.....
6R05014	COVER, MERCURY SWITCH .....	.....
6R05016	BRACKET, MOUNTING, MERCURY SWITCH .....	.....
6R05018	BUSHING, PIVOT, MERCURY SWITCH BRACKET .....	.....
6R05020	CLIP, MOUNTING, MERCURY SWITCH .....	.....
6R05022	BUMPER, RUBBER, MERCURY SWITCH BRACKET .....	.....
6R05024	SPRING, RETURN, MERCURY SWITCH BRACKET .....	.....
6R05026	COMPRESSION DEVICE, COMPLETE Assembly .....	.....

Medical Dept. No.	Nomenclature	Figure No.
6R05028	RAIL, OUTER, COMPRESSION DEVICE .....	.....
6R05030	BUSHING, SPACER, COMPRESSION DEVICE, RAIL .....	.....
6R05032	SUPPORT, COMPLETE SLIDING BELT .....	.....
6R05034	SLIDE, COMPRESSION DEVICE BELT SUPPORT .....	.....
6R05036	FASTENER, BELT, SLIDE, COMPRESSION DEVICE .....	.....
6R05038	BUSHING, PIVOT, SLIDE BELT FASTENER .....	.....
6R05040	SCREW, THUMB, BELT SUPPORT SLIDE .....	.....
6R05042	BAND, COMPRESSION DEVICE .....	.....
6R05044	ATTACHMENT, WINDING, COMP- LETE: Assembly, for compression device .....	.....
6R05046	SUPPORT, SLIDING, WINDING ATTACHMENT .....	.....
6R05048	ROLLER, BELT, COMPRESSION DEVICE .....	.....
6R05050	HOLDER, BELT, WINDING ATTACH- MENT .....	.....
6R05052	BUSHING, COMPRESSION DEVICE BELT ROLLER .....	.....
6R05054	RATCHET, COMPRESSION DEVICE WINDING ATTACHMENT .....	.....
6R05056	SPACER, ARM, HANDLE, COMPRES- SION DEVICE .....	.....
6R05058	ARM, HANDLE, COMPRESSION DEVICE .....	.....
6R05060	HANDLE, COMPRESSION DEVICE WINDING ATTACHMENT .....	.....
6R05062	BUSHING, HANDLE, WINDING ATTACHMENT .....	.....
6R05064	PAWL, RATCHET, WINDING ATTACH- MENT .....	.....
6R05066	SPRING, RATCHET .....	.....
6R05068	BUSHING, SPRING, RATCHET PAWL .....	.....
6R05070	SCREW, RATCHET PAWL SPRING .....	.....
6R05072	SPACER, WINDOW, INDICATOR, SCALE .....	.....
6R05074	BRACKET, SPIRIT LEVEL .....	.....
6R05076	LEVEL, SPIRIT .....	.....
6R05078	PANEL, DOOR, PLEXIGLASS, DOOR FRAME .....	.....
6R05080	HOOK, DOOR, PLEXIGLASS .....	.....
6R05082	PAD, PLEXIGLASS DOOR HOOK .....	.....
6R05084	SHIM, PLEXIGLASS DOOR HOOK .....	.....
6R05086	STOP, CASSETTE SHIFT RELEASE HANDLE .....	.....

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